

## AEC Architecture, Engineering and Construction

### **AEC-570 Construction Estimating I** (3 cr.)

Fall and Spring

Estimating and analyzing material, labor, equipment, methods of construction, overhead and profit, and submitting these factors in the form of a bid.

### **AEC-575 Construction Practicum** (2-4 cr.)

Summer

Technical information, construction problems and actual development of light residential structure.

### **AEC-595 Seminar** (1-2 cr.)

Summer

(Title will reflect specific construction content). Current and projected methods, concepts, technologies and innovations in construction. **R**

### **AEC-638 Contract Requirements and Specifications** (3 cr.)

Fall and Spring

Principles of contract requirements and construction specification organization. Development of basic skills of project manual preparation. Demonstration of role of specifications within the construction process and relationship to other construction contract documents.

### **AEC-652 Environmental Systems — HVAC** (3 cr.)

Spring

Principles of heating, ventilating and air conditioning; analysis and selection of systems and equipment.

### **AEC-653 Environmental Systems — Plumbing and Electrical** (3 cr.)

Spring

Plumbing, electrical and illumination systems for light and heavy construction.

### **AEC-658 Structural Systems — Wood and Steel** (3 cr.)

Fall

Analysis, selection, and delineation of wood and steel structural components and systems in buildings.

### **AEC-659 Structural Systems-Concrete and Masonry** (3 cr.)

Fall and Spring

Analysis, selection, and delineation of concrete and masonry structural components and systems in buildings.

### **AEC-670 Construction Estimating II** (2 cr.)

Fall and Spring

Computer-based estimating systems for construction. Take-off, pricing, bid preparation, resource and cost studies, and database operations.

### **AEC-671 Project Scheduling and Cost Control** (3 cr.)

Fall and Spring

Total concept of construction industry: contracting, financing, bidding, planning, organizing, coordinating, and controlling functions and techniques.

Prerequisites: take AEC-570.

### **AEC-672 Management of Construction** (3 cr.)

Fall and Spring

Organizing, managing and operating the contracting firm.

## ANTH Anthropology

### **ANTH-620 The Anthropological Study of Family Systems 3 cr.**

Fall

Anthropological, cross-cultural view of family systems, with attention to their organization, functions, dynamics and articulation with other institutions.

### **ANTH-630 Ojibwe Lifeways 4 cr.**

Summer

Indepth, interactive study of Ojibwe culture within a Wisconsin reservation community. \$

## APRL Apparel Design/Manufacturing

### **APRL-530 Cut and Sewn Knits 3 cr.**

An in-depth study of stretch fabric sewn product from fabrication to production. Prerequisites: take APRL-180 and APRL-202

### **APRL-545 Textiles For Interiors 2 cr.**

Spring

Raw materials, fabric structures, specifications, and legislation related to quality, performance, and maintenance of textiles for commercial and household uses.

### **APRL-555 Special Topics in Apparel Design/ Manufacturing 1-3 cr.**

Special topics in clothing and textiles. Repeatable for different topics. **R**

### **APRL-567 Engineered Tailoring 3 cr.**

Fall

Industrial production methods applied to construction of tailored garments.

### **APRL-581 Functional Clothing Design 3 cr.**

Fall

Application of physical science theory to problems in clothing design: impact protection and thermal balance of the human body, structural properties of materials, and apparel forms.

### **APRL-582 Advanced Pattern Development 3 cr.**

Fall and Spring

Develop advanced patterns for garments by draping fabric and using a computer-aided design system.

### **APRL-585 CAD for Apparel Images 3 cr.**

Fall and Spring

Create apparel and patterned textile images using CAD to create professional presentations appropriate to the fashion industries.

**APRL-590 Practicum in Textile Design** 3 cr.

Use of textile design techniques as means of artistic expression: stitchery, weaving, knotting, applique and hooking; emphasis on good design and creativity.

**APRL-594 Knit Design and Technology** 3 cr.

Fall and Spring

Stitch formation and patterning of warp and filling knits. Influences on aesthetics and performance of knit fabrics. Design and production of knitted fabric and garments on a flat bed knitting machine, including use of CAD techniques.

**APRL-605 International Study Tour to the Fashion Industry** 1-6 cr.

Spring

Tour of international centers of clothing, textiles, and related arts. Study of the cultural patterns. Program includes lectures by consultants and seminars on the various phases of the fashion and fabric industries. **R**

**APRL-610 History of Costume--Ancient to European** 3 cr.

Fall

Development of costume throughout the ages: fashion as it reflects past cultures and influences present day costume.

**APRL-619 National Study Tour to Fashion Industry** 1 cr.

Fall and Spring

Five-day visit to New York or alternate city: study hours, discussions and lectures by leaders in American fashion market.

**R**

**APRL-670 Portfolio Development For Apparel Design And Development** 3 cr.

Fall and Spring

A capstone course: resume and job search development; organization and updating projects from previous courses; creation of new portfolio projects that display a high level of apparel design and development skills and competencies.

**APRL-674 Apparel Product Development** 3 cr.

Spring

Capstone course incorporating soft goods industrial and managerial techniques for production simulation of apparel product development.

**APRL-680 Draping** 3 cr.

Fall

Application of draping principles in design and construction of garments; emphasis on creativity.

**APRL-685 Apparel Design Studio** 3 cr.

Spring

Creation, development, and formal presentation of original designs using flat pattern and/or draping techniques.

Preparation of professional portfolio to include CAD and other illustrative materials representative of individual expertise.

**APRL-695 Historic and Contemporary Fabrics** 3 cr.

Fall

Analysis of designs and techniques of decorating historic and contemporary fabrics; contribution of decorative fabrics to enrichment of human experience.

**APRL-735 Problems in Textiles, Clothing and Retail Marketing** 2 cr.

Fall, Spring and Summer

Identification, selection and completion of a problem in textiles, clothing, and retail marketing culminating in a Plan B paper. Prerequisites: take EDUC-740. **\$**

**APRL-769 Design Option Thesis** 2-6 cr.

Fall, Spring and Summer

Independent research under direction of investigation adviser. Culminating in a design show. A descriptive paper written according to thesis standards, including slides, will be presented. Consent of Program Director. Prerequisites: take EDUC-740. **\$**

**APRL-780 Advanced Draping 1 cr.**

Manipulation of various fabrics on a dress form to develop garments from given and self-designed sketches that reflect advanced techniques. Construct garments from patterns. Prerequisites: take APRL-680.

**APRL-781 Advanced Flat Pattern 2 cr.**

Draft and develop paper patterns for garments by varying a master pattern from given and self-designed sketches that reflect advanced techniques. Construct garments from pattern. Instructor's consent required.

**APRL-790 Seminar in Textiles, Clothing and Retail Marketing 2 cr.**

Review, evaluation and interpretation of current research in textiles, clothing and retail marketing.

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## BIO Biology

**BIO-560 Introduction to Neuroscience 3 cr.**

Investigation of the human nervous system at the molecular, cellular and system level. Organization and function of neuronal cells, sensory receptors, sensory and motor pathways and integration centers. Introduction to electro- physiology, biochemistry of neurotransmitters and receptors, neuropharmacology, development of the nervous system, and consequences of neuronal disease and trauma.

**BIO-561 Psychobiology 2 cr.**

Biological basis of human and animal behavior: evolution of physiological and behavioral adaptations of organisms to their environment.

**BIO-562 Advanced Physiology 3 cr.**

Fall and Spring

Human physiology with emphasis on integration of the nervous, muscular, cardiovascular, immune, renal, respiratory, digestive and endocrine systems. Cellular and molecular processes are studied. Computer simulations and experiments in frog physiology will be utilized.

**BIO-606 Food Microbiology 3 cr.**

Methods of food preservation, their effectiveness and related food spoilage by microorganisms. Quality control techniques used to determine presence of specific groups of economically important microorganisms.

**BIO-634 Cadaver Dissection 3 cr.**

Detailed regional exploration, through cadaver dissection, of human anatomical structures with emphasis on appendages, thorax, and abdomen. Identification of muscles, blood vessels, nerves and organs.

### **BIO-720 Toxicological Effects on Humans 3 cr.**

Fundamental principles of toxicology as applied to human physiology and health.

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## **BUACT Business Accounting**

### **BUACT-546 Seminar 1-3 cr.**

Current topics in business accounting. (Title will reflect specific content.)

**R**

### **BUACT-730 Financial and Cost Analysis 3cr.**

Overview of financial accounting concepts and analysis combined with a strong emphasis on manufacturing costs and managerial decision-making. Application of cost information in the strategic planning and measurement process for corporations, including capital budgeting.

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## **BUINB Business International Business**

### **BUINB-538 International Logistics (3 cr.)**

Spring

International logistics strategy: customer service, inventory, transportation, packaging, warehousing, storage, exporting, licensure, joint ventures, ownership documentation, terms of trading, organization, financial and management skills.

### **BUINB-567 International Management (3 cr.)**

Theory and practice of managing international organizations, including sociocultural aspects and group dynamics of international businesses and service organizations.

### **BUINB-685 International Marketing (3 cr.)**

Fall and Spring

Principles and policies of marketing goods and services in international markets. Concepts, strategies and policies of world trade and multinational firms.

### **BUINB-688 International Business Practicum (3 cr.)**

Fall and Spring

Assist an actual business in developing their international marketing plan. Students, under the supervision of a faculty member, determine a product's foreign marketability. Prerequisites: take BUINB-685.

### **BUINB-689 International Business Policies (3 cr.)**

Fall and Spring

Students develop the ability to solve business problems in the international arena using a scientific approach to decision

making by studying business cases on international policy formulation and administration, manufacturing, marketing, finance, accounting, personnel and public relations functions.

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## BULGL Business Legal

### **BULGL-546 Seminar** (1-3 cr.)

Current topics in business. (Title will reflect specific business content.) **R**

### **BULGL-601 Legal Environment of Business** (2 cr.)

Fall and Spring

Changing relationship of government and industry: regulatory legislation, administrative agencies, national policies and social control.

### **BULGL-673 Legal Aspects of Construction** (3 cr.)

Fall

Analysis of contracts and documents used in building construction industry: rights of the parties. Labor relations: law and labor, legality of strikes, legality of picketing and boycott as economic pressure, unfair labor practices, employer and union, rights and responsibilities of supervisor and worker.

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## BUMGT Business Management

### **BUMGT-546 Seminar** (1-3 cr.)

Fall, Spring and Summer

Current topics in business. (Title will reflect specific business content.) **R**

### **BUMGT-680 Entrepreneurship: Small Business Planning** (3 cr.)

Fall and Spring

Concepts, strategies, and applications involved in entrepreneurship. Profile of entrepreneurs and the risks and rewards, creating products and services for the market place, going into business --start-up, buy out, franchise— legal and financial aspects. Preparing a business plan required.

Prerequisites: take BUMKG-330, BUACT-206 or BUACT-200.

### **BUMGT-690 Strategic Management and Business Policy** (3 cr.)

Fall and Spring

Integrates previous business studies, develops ability to solve business problems through scientific approaches to decision-making. Students use business cases on policy formulation and administration: manufacturing, marketing, finance, accounting, personnel, and public relations functions.

**BUMGT-760 Strategic Planning and Deployment (2 cr.)**

Fall and Spring

Introduction to corporate planning, strategy and policy. Orientation to generalized planning process and the outputs of planning system. A discussion of planning decision sub-system, strategic information sub-system, planning organizational sub-system and planning management sub-system. Instructor's consent required.

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## BUMIS Business Management Information Systems

**BUMIS-546 Seminar(1-3 cr.)**

Current topics in business. (Title will reflect specific business content.) **R**

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## BUMKG Business Marketing

**BUMKG-508 Marketing for Non-Profit Organizations (2 cr.)**

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Strategic marketing planning process, marketing audit, marketing strategy development, positioning concept, market research, marketing mix, communication strategies and ethical issues for non-profit organizations. Sophomore level or higher.

**BUMKG-537 Procurement, Sourcing and Supply Chain Management (3 cr.)**

Fall and Spring

Processes used in procuring goods and services; analyzing and selecting global sources of supply; economics of total cost of ownership; importance of quality, delivery, ethics, and legal aspects of supplier management; negotiation principles. Recommended: proficiency with spreadsheet software.

**BUMKG-546 Seminar (1-3 cr.)**

Current topics in business marketing. (Title will reflect specific content.) **R**

**BUMKG-550 E-Business Strategy and Practice (3 cr.)**

Fall and Spring

Development and growth of Internet marketing. An examination of e-business basics, business models, current and future trends, major issues, evaluation of model design and Internet marketing plans.

**BUMKG-585 Target Marketing 3 cr.**

The study and application of methods used to identify viable market segments; use of demographic, psychographic and cultural research findings to successfully market products and services to various market segments.

**BUMKG-638 Principles of Logistics (3 cr.)**

Fall and Spring

Applies systems approach to plan movement and storage of raw materials, components and finished goods from point of origin to point of consumption. Focuses on transportation and warehousing decisions, channel structures, physical distribution, materials management, and supply chain concepts.

**BUMKG-639 Seminar: Supply Chain Systems Design (3 cr.)**

Spring

Synthesizing experience in supply chain, cases, problems and team/individual research will focus on analyzing, designing

and modeling cost effective supply chain systems that utilize innovative technology and business practices for procuring, manufacturing, storing, and moving goods from suppliers, manufacturers, distributors, retailers and end customer.

**BUMKG-658 Negotiation and Contracts (3 cr.)**

Fall and Spring

Processes, analysis, techniques and strategies used to negotiate and develop contracts. Defining roles and importance of relationships. Identifying interests, developing and using power, creating and evaluating criteria, exploring options, analyzing offers, dealing with objections and impasses, reaching final agreement. Converting business agreements into contracts. Importance of fairness and ethics. Prerequisites: take BUMKG-537

**BUMKG-679 Marketing Research (3 cr.)**

Fall and Spring

Experimental and survey techniques to secure information for successful marketing; primary and secondary sources; data collection, compilation and analysis methods; effective communication of conclusions and recommendations to management. First-level statistics required.

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## BURTL Business Retail

**BURTL-519 International Economic Trends in Textiles and Clothing (3 cr.)**

Fall and Spring

Economic importance of the textile and apparel industries in the United States and the world.

**BURTL-522 Merchandising and Marketing an Apparel Line (2 cr.)**

Spring

Merchandising and marketing of product lines from manufacturer to retailer to consumer.

**BURTL-527 Store Management (3 cr.)**

Fall and Spring

Develop management skills for retail stores of varying size.

**BURTL-535 Special Topics in Retail Merchandising and Management (1-3 cr.)**

Fall, Spring and Summer **R**

**BURTL-550 Marketing to Aging and Minority Consumers (2 cr.)**

Fall

Identify product and service needs of Native, African, Asian and Hispanic Americans, and aging consumers. Interpret demographic, psychological and cultural data of these special populations and develop merchandising strategies.

Prerequisites: take BUMKG-330.

**BURTL-617 Social/Psychological Aspects of Clothing (3 cr.)**

Fall and Spring

Social and psychological influence of dress on individual and group behavior patterns.

**BURTL-619 National Study Tour to Fashion Industry (1 cr.)**

Fall and Spring

Five-day visit to New York or alternate city: study hours, discussions and lectures by leaders in American fashion market. Equivalent to APRL-619. **R**



**BURTL-625 Current Retail Strategies for a Differential Advantage** (2 cr.)

Fall and Spring

Comparative analysis of specific retail corporations' strategies to gain a differential advantage with their merchandising and operational methodology.

**BURTL-626 Fashion Retailing Practicum** (4 cr.)

Fall, Spring and Summer

Observation and structured experience in merchandising procedures dealing with complete operations and management of retail establishment.

**BURTL-690 Advanced Merchandise Planning Control** (3 cr.)

Fall and Spring

Application of merchandise theory and techniques to budget, manage, and adjust actual purchases, inventory, and sales of an actual retail business.

**BURTL-735 Problems in Textiles, Clothing and Retail Marketing** (2 cr.)

Fall, Spring and Summer

Identification, selection and completion of a problem in textiles, clothing, and retail marketing culminating in a Plan B paper. Equivalent to APRL-735 Prerequisites: take EDUC-740. \$

**BURTL-770 Thesis -- Textiles, Clothing and Retail Marketing** (2-6 cr.)

Independent research under direction of investigation adviser. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Consent of Program Director. Equivalent to APRL-770. Prerequisites: take EDUC-740. \$

**BURTL-790 Seminar in Textiles, Clothing and Retail Marketing** (2 cr.)

Review, evaluation and interpretation of current research in textiles, clothing and retail marketing. Equivalent to APRL-790.

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## **CADD CADD/Drafting**

**CADD-595 Seminar 1-2 cr.**

(Title will reflect specific design, research and development content.) Current and projected communication methods, concepts, technologies and innovations in design, research and development.

R

**CADD-600 Workshop: 1-3 cr.**

Special topics in design, research and development, providing hands-on or experiential learning activities. Specific content and title to reflect the topic of the workshop. R

**CADD-636 Computer Assisted Design Problems 3 cr.**

Advanced CADD applications. Construct three dimensional wireframe drawings. Perform finite element analysis on select components. Customize software for specific applications. In-depth analysis of CADD applications in mechanical and architectural design.

**CADD-666 3-D Computer Modeling and Rendering 3 cr.**

Development of three-dimensional computer models and computer graphic images. Includes 3-D surface modeling and rendering.

**CADD-792 Special Projects in Drafting/Product Design 2-6 cr.**

Substantive study and activity for specialists in the design, research and development field to include library work, field observation, laboratory work planned by the student and approved and supervised by a faculty consultant in design, research and development. Preparation of a technical report may be repeated for a maximum of six semester credits. R

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## CHEM Chemistry

**CHEM-501 Physical Chemistry Lecture 3 cr.**

Fall and Spring

Fundamental physical chemistry; behavior of gases, liquid state, properties of solutions, principles of thermodynamics, thermochemistry. Taken concurrently with CHEM-503. Recommended: CHEM-531.

**CHEM-503 Physical Chemistry Laboratory 1 cr.**

Lab course to be taken concurrently with CHEM-501. Experimental techniques and apparatus; treatment of experimental data. Recommended: CHEM-531.

**CHEM-511 Biochemistry 4 cr.**

Fall and Spring

Fundamental chemistry and metabolism of carbohydrates, lipids and proteins; second- and third-order structure of proteins; chemistry of nucleic acids; nature and dynamics of enzymes and enzyme action; biological oxidations; lab work in metabolism, chromatography, enzyme action, qualitative and quantitative analytical procedures.

**CHEM-515 Food Chemistry 3 cr.**

Spring

Organic biochemistry of foods: enzymatic and non-enzymatic changes associated with food preparation and storage (Maillard-Browning reaction), denaturation of protein, changes in color, odor, texture and nutritive value. Techniques for isolation and identification of biochemical constituents of foods.

**CHEM-531 Quantitative Analysis 3 cr.**

Fall

Introduction to the principles of quantitative chemical analysis and training in precision laboratory techniques.

**CHEM-535 Instrumental Methods of Analysis 3 cr.**

Spring

Application of instrumental methods to chemical analysis: electrochemical, spectrophotometric, chromatographic, and thermal analysis. Techniques for methods development, sample preparation, optimization of operating conditions, and data analysis needed to obtain accurate, reproducible results by means of instrumentation.

**CHEM-541 Chemistry of Materials 4 cr.**

Fall and Spring

Relationship of the chemistry and microstructure of structural materials (metals, polymers and ceramics) to their properties; degradation of those materials, corrosion of metals, polymers and ceramics.

**CHEM-553 Environmental Chemistry 3 cr.**

Fall and Spring

Principles and origins of chemical reactions that lead to ecological imbalance; systems that have contributed to large-scale environmental pollution or are of current importance; chemical technology needed to correct imbalance.

**CHEM-612 Advanced Biochemistry 3 cr.**

Fall and Spring

Molecular biology of humans and other organisms; biosynthesis and catabolism, emphasizing enzyme action; chemistry of specific tissues and fluids.

**CHEM-652 Environmental Regulations Management 3 cr.**

Fall, Spring and Summer

Laws governing environmental issues. Environmental regulations, applicability of the laws, and resources for interpreting the regulations. Evaluation of environmental research. Consent of instructor required.

**CHEM-710 Industrial Hygiene Instrumentation 2 cr.**

Fall, Spring and Summer

Work place environment analysis by direct reading and integrated sampling techniques.

**CHEM-742 Industrial Hygiene 3 cr.**

Principles and techniques for recognizing, evaluating and controlling existing or potential occupational health hazards that affect employee safety and health.

**CHEM-762 Industrial Hygiene Ventilation and Noise Control 3 cr.**

Spring

Evaluation and testing of contaminant control ventilation systems for removal of toxic gases, vapors, and particulates from work environments. Evaluation of noise exposures and application of noise control methods to reduce worker exposures.

\$

**CHEM-770 Thesis - Industrial Hygiene 2-6 cr.**

Independent research under direction of investigation advisor. Selection of problem, review of literature, planning and conducting research, interpretation of findings, and preparation of final paper according to thesis standards. Students may enroll for two, four or six semester hours of credit in various terms for a final total of six. Consent of program director. Prerequisites: take EDUC-740 or INMG-700. **R**

## CNS Cognitive Neuroscience

CNS-681 Mathematics and the Brain (4 cr.)

Basic principles of computational cognitive neuroscience. Simulating cognition using biologically based networks of neuron-like units (neural networks).

## COUN Counseling

**COUN-600 Workshop in Counseling 1-3 cr.**

Current specialized topics studied through experiential activities. **R**

**COUN-606 Peer Supervisory Experience 1 cr.**

Fall and Spring

Experience in observation and feedback to peers undergoing counseling skill training. Instructor's consent required. **R**

**COUN-647 Assessment and Treatment of Eating Disorders 2 cr.**

Summer

Description and diagnostic criteria for anorexia nervosa, bulimia nervosa, obesity, and compulsive overeating. Psychological, sociological, and familial influences on the development of the disorders. Assessment instruments, approaches, and treatment considerations.

**COUN-694 Counseling Older Persons 2-3 cr.**

Spring Semester

Training service providers in counseling skills and gerontology through discussion, observation and supervised counseling experiences.

**COUN-700 Seminar in Counseling 1-3 cr.**

Special topics on current developments in the field. Each seminar is devoted to a specific development to be indicated with a subtitle and description. **R**

**COUN-715 Orientation To Mental Health Counseling 3 cr.**

Fall Semester

Professional, ethical, and legal issues in mental health and AODA counseling. National and Wisconsin credential standards for mental health and AODA counseling practice. Regional mental health and AODA practice settings. Public policy issues in mental health and AODA counseling. .

**COUN-720 Psychopharmacology 2 cr.**

Summer Session

Overview of abused street and prescription drugs and the legitimate use of psycho-pharmaceutical medicine. Fundamental concepts of neuroanatomy and neurochemistry. Medications for the treatment of substance abuse disorders and chronic pain management. Signs and symptoms of drug toxicity, drug interactions and side effects. Crisis intervention strategies.

**COUN-721 Alcohol and Drug Abuse Treatment Programs 3 cr.**

Spring Semester

Psychological factors in alcohol and drug abuse. Treatment programs and approaches used by alcohol and drug abuse counselors.

**COUN-722 Advanced Topics in Compulsive Behavior Disorders 3 cr.**

Fall

Psychology of shame and its relationship to substance abuse and other compulsive behaviors. Overview of prominent topics in compulsive behavioral disorders including substance abuse, gambling, eating, spending money, sex, internet, and other excessive and harmful behaviors. Advanced counseling skill development through psycho-education presentations and hypothetical problem solving. Ethical issues in counseling.

Prerequisites: take COUN-721.

**COUN-723 Psychopathology: Assessment and Treatment Planning 3 cr.**

Fall Semester

Training in the use of the current edition of the diagnostic and statistical manual DSM for assessment of mental disorders; use of behavioral and psychometric assessment procedures; treatment planning.

**COUN-724 Adolescent Substance Abuse Counseling 2 cr.**

Major adolescent development concepts, current trends, and culturally sensitive approaches in the assessment, prevention and treatment of adolescent alcohol and drug addiction.

**COUN-725 Social and Cultural Issues in Counseling 3 cr.**

Spring Semester

Major concepts, theoretical perspectives, professional issues, and skills of effective counseling related to such factors as culture, ethnicity, nationality, age, gender, sexual orientation, mental and physical characteristics, education, family values, religious and spiritual values, and socio-economic status.

**COUN-727 Mindfulness Applications in Counseling 2 cr.**

History and methods of mindfulness psychology. Research supporting mindfulness integration in counseling. Theories and techniques of current mindfulness-based counseling and psychotherapy. Experiential mindfulness exercises and practice.

**COUN-735 Problems in Counseling 2 cr.**

Plan B investigations are the primary purpose of this course. Students who are ready to write their Plan B paper should register for this course and then confer with the major adviser to select a staff member who will serve as an investigation adviser. Meetings with the adviser are by arrangement only. Prerequisites: take EDUC-740 or MFT-765. \$

**COUN-745 Treating Personality Disorders 1 cr.**

Summer Session

Diagnosis, assessment, and treatment of personality disorders as defined in the current edition of the Diagnostic and Statistical Manual DSM. Underlying belief systems associated with the various personality disorders. Therapeutic strategies useful in working with individuals with personality disorders.

Prerequisites: take COUN-723.

**COUN-750 Counseling Theory 3 cr.**

Fall, Spring and Summer Semesters

History and theories of counseling and psycho- therapy: psychoanalytic, humanistic/existential, cognitive/behavioral, family systems, feminist, and others. Underlying personality theory. Integration and eclecticism in counseling practice. Illustrative practical applications. Integration of counseling theory into a personal counseling style.

**COUN-752 Group Dynamics 3 cr.**

Fall, Spring and Summer Semesters

Theoretical and experiential understandings of group work, dynamics/development, and leadership approaches. Small group experience and supervised training in essential group leadership skills. Design and implementation of different types of groups for diverse populations in varied professional settings. May take concurrent w/COUN788 with Instructor's Approval.

Prerequisites: take COUN-788.

**COUN-754 Assessment and Clinical Interviewing in Counseling 1 cr.**

Instruments and procedures used for the assessment of behavior relevant to and appropriate for mental health counseling. Emphasis on the selection, interpretation, and application of major assessment instruments and procedures. Synthesis of assessment information into psychological reports.

Prerequisites: take SPSY-753.

**COUN-761 Counseling Children and Adolescents 3 cr.**

Spring Semester

Concepts and developmental approaches to counseling with children and adolescents. Integration of culturally responsive strategies, identification of at-risk behavior and prevention, and strategies to work with parents and families.

**COUN-770 Thesis 2-6 cr.**

Independent research under direction of investigation adviser. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of method of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for 2, 4, or 6 semester hours of credit in various terms with a final total of six. Consent of Program Director.

Prerequisites: take EDUC-740 or MFT-765. R \$

**COUN-775 Alcohol and Drug Abuse Counseling Practicum I 8 cr.**

Fall Semester

Counseling under supervision in an alcohol and drug abuse treatment facility. Laboratory instruction on various aspects of alcohol and drug abuse treatment approaches.

Prerequisites: take COUN-721 and COUN-788.

**COUN-776 Alcohol and Drug Abuse Counseling Practicum II 8 cr.**

Spring Semester

A continuation of Alcohol and Drug Abuse Counseling Practicum I. Students will continue a supervised counseling experience in an appropriate treatment facility and related laboratory instruction. Prerequisites: take COUN-775.

**COUN-788 Counseling Process Laboratory 3 cr.**

Fall, Spring and Summer Semesters

Basic attending and influencing skills used in the one-to-one and one-to-group situations involving laboratory experiences, such as counseling, feedback, critiquing, modeling, assessing and evaluating.

Prerequisites or Corequisite: COUN-750

**COUN-789 Cognitive-Behavioral Therapy: Principles And Application 3 cr.**

Fall and Spring Semesters

Training in the theory and practice of cognitive- behavioral, and solution-focused treatment models. Assessment, intervention, and self-management strategies through this approach will be emphasized. Application of cognitive-behavioral techniques to human problems.

Prerequisites: take COUN-750.

**COUN-793 Mental Health Counseling Practicum 3 cr.**

Fall and Spring Semesters

Minimum of 150 hours of closely supervised counseling experience in an appropriate mental health setting. Regular seminars and individual supervision sessions required.

Prerequisites: take COUN-788

**COUN-794 Mental Health Counseling Internship 2-6 cr.**

Fall, Spring and Summer Semesters

Minimum of 200 hours of supervised experience in a mental health or AODA setting for 2 credits. Applied professional experiences, including individual, group, marriage and/or family counseling; intake interviewing; diagnosis; psychological testing; treatment planning; consultation/outreach; referrals; and/or documentation.

Prerequisites: take COUN-793. **R**

**COUN-892 Advanced Counseling Practicum 2 cr.**

Clinical supervised counseling experiences in a variety of school institutional and agency settings. Designed to assist the student to more adequately understand and apply the dynamics of human behavior in the one-to-one counseling relationship. A minimum of 60 to 90 clock hours of experience is required. Prerequisites: take COUN-797. **R**

**COUN-895 Field Study 2-6 cr.**

Experience in action-type field research in pupil personnel services. The student will identify and research a topic directly related to his career position. Preparation and presentation of a formal report of the study to appropriate personnel.

Student may enroll for 2, 4, or 6 semester hours of credit in various terms with a final total of six. **R \$**

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## CS Computer Science

**CS-545 Image Processing (3 cr.)**

Spring

Theory and applications of digital image processing. Mathematical foundations and algorithms for enhancement, restoration, compression, segmentation and reconstruction from projections.

**CS-546 Simulation Modeling and Analysis (3 cr.)**

Fall and Spring

Simulation as a problem-solving technique; models, analysis and languages for simulation; data collection; random variate generation; verification and validation; output analysis; optimization of systems.

**CS-741 Computer Programming Techniques (2 cr.)**

Fall, Spring and Summer

Introduction to computer systems and their utilization. Emphasis on translating language with application to individual research projects, statistical or developmental. (Not available to students who have completed CS-141.)

## **CSTEM College of Science, Technology, Engineering and Mathematics**

### **CSTEM-590 Technical Service Schools (.5-6 cr.)**

Some special-purpose technical courses offered by manufacturers are suitable for college credit. Guidelines: 1) Student makes all arrangements with manufacturer offering courses; 2) One credit is awarded for each full week (40 hours) of attendance; 3) Student enrolls and pays fees prior to taking course; 4) Approval of dean of College of Science, Technology, Engineering and Mathematics needed before enrolling for credit; 5) Graduate School approval required for students taking courses for graduate credit. **R**

### **CSTEM-701 Lean Seminar I: Principles of Lean Manufacturing (.5 cr)**

Introduces a systematic approach to eliminating waste in manufacturing processes by use of the 5S approach to organization, reducing batch sizes, utilizing point of use storage, using pull systems, implementing cellular/flow, implementing quality at the source, and involving employees. Includes live simulations.

### **CSTEM-702 Lean Seminar II: Value Stream Mapping Manufacturing (.5 cr)**

Value Stream Mapping (VSM) is a method to visually depict material and information flow through an industrial operation. Principles and techniques of the VSM process, mapping the current state of a sample company, applying Lean concepts to develop an improved future state, and identifying steps needed to achieve that state. Prerequisites: take CSTEM-701.

### **CSTEM-703 Lean Seminar III: Principles of Cellular/Flow Manufacturing (.5 cr)**

Use of Cellular/Flow Manufacturing in linking manual and machine operations into the most efficient combination of resources to maximize value added content, ensuring continuous product flows, and meeting customer demands, while minimizing waste. Prerequisites: take CSTEM-701.

### **CSTEM-704 Lean Seminar IV: The 5S System (.5 cr)**

Use of the principles of 5S system of manufacturing improvements (sort, set in order, shine, standardize, sustain) to develop a visual workplace that is organized, clean, and standardized and contains only what is required, enhancing the organization's communication and productivity. Prerequisites: take CSTEM-701.

### **CSTEM-705 Lean Seminar V: Quick Changeover/Setup Reduction (.5 cr)**

The principles of the Single Minute Exchange of Dies (SMED) system, a four-step changeover improvement process, are used to present techniques of designing no-cost/low-cost solutions to dramatically reduce or eliminate changeover time.

Prerequisites: take CSTEM-701.

### **CSTEM-706 Lean Seminar VI: Total Productive Maintenance (.5 cr)**

Use of the Total Productive Maintenance (TPM) system of maximizing manufacturing equipment productivity. Utilization of Overall Equipment Effectiveness (OEE) to determine effective capacity of equipment. Development of effective, preventive, and predictive maintenance tools to reduce machine downtime and achieve autonomous maintenance.

Prerequisites: take CSTEM-701.

### **CSTEM-707 Lean Seminar VII: VSM/Project Planning (.5 cr)**

The roles and expectations of a Value Stream Manager and the formation and leadership of a team to drive change in the organization. Individual project plans for Lean implementation projects are initiated.

Prerequisites: take CSTEM-701, CSTEM-702, CSTEM-703, CSTEM-704, CSTEM-705, and CSTEM-706.

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## **CTE Career and Technical Education**

### **CTE-501 Preservice Workshop For Career and Technical Educators 1 cr.**

Introduction to the basic concepts of teaching courses in Wisconsin career, technical, and adult education.

### **CTE-502 Principles of Career and Technical Education 2 cr.**

Fall, Spring and Summer Semesters

Philosophy, organization and administration of career, technical and adult education, nationwide, in Wisconsin, and on the local level.

### **CTE-510 Foundations of Health Sciences Occupations Education 3 cr.**

The philosophy, organization and administration of health science occupations education at the national, state and local level; includes current topics in health science occupations education with application for personnel in the field.

### **CTE-520 Careers in Health Care 3 cr.**

Investigation of health care delivery system, services, occupations, and related health services, and the health sciences career clusters. Bachelor's degree required.

### **CTE-530 Curriculum Planning in Health Science Occupations 3 cr.**

Competency-based and individualized approaches to principles of curriculum and course construction, study of curriculum terminology, methods of selecting and organizing content for health science occupations educators. Prerequisites: take CTE-510, CTE-520.

### **CTE-534 Performance Analysis 3 cr.**

Analysis techniques utilized in curriculum development. Emphasis on task analysis and related procedures. Includes occupational and needs analysis, competency identification, objective writing and information mapping. Integrates task analysis with a total system for developing and revising vocational curriculum or job training programs.

### **CTE-537 Competency-Based Education, Career and Technical 2 cr.**

Fall and Spring Semesters

Competencies for career, technical and adult education programs and courses. Development of competency-based education performance indicators in all domains, a competency-based education management system, and basis for competency-based education evaluation.

### **CTE-546 Seminar 1-3 cr.**

Fall, Spring and Summer Semesters

Current topics in career, technical and adult education with application for personnel in the field. Instructor's consent required.

### **CTE-559 Technology Impacts Occupational Programs 4 cr.**



Summer Session

Presentation of latest technology in communications, manufacturing, construction, and/or transportation which involve concepts from math, science and computer science. **R**

**CTE-560 Cooperative Occupational Education Programs 2 cr.**

Spring and Summer Semesters

Philosophy, organization, coordination and teaching techniques or cooperative education programs in the various career and technical areas. Roles, responsibilities, duties of the cooperative teacher coordinator.

**CTE-575 Workshop 1-3 cr.**

Fall, Spring and Summer

Special topics providing hands-on or experiential learning activities. Specific content and title to reflect the topic of the workshop.

**CTE-598 Field Experience 1-2 cr.**

**CTE-605 Methods of Teaching Career and Technical Education 2 cr.**

Fall and Summer Semesters

Competency-based and individualized approach to methods of teaching career and technical education.

**CTE-638 Course Construction For Career and Technical Educators 2 cr.**

Fall and Summer Semesters

Competency-based and individualized approach to principles of course construction for career and technical educators.

**CTE-640 Instructional Evaluation in Career and Technical Education 2 cr.**

Spring and Summer Semesters

Competency-based and individualized approach to instructional evaluation for career and technical educators.

**CTE-674 Adult Education 2 cr.**

Fall Semester

Philosophy and history of adult education in the United States. Techniques for teaching adults: psychological factors, methods, adult interests and characteristics.

**CTE-708 Issues in Career and Technical Education 2 cr.**

Summer Session

An in-depth study of contemporary issues affecting career, technical and adult education. Possible solutions or alternatives will be proposed.

**CTE-710 Coordination and Supervision of Career and Technical Education 2 cr.**

Fall, Spring and Summer Semesters

Principles of coordination/supervision in career, technical and adult education. The coordinator/supervisory positions and their functional relationship to the career and technical education system.

**CTE-735 Problems in Career and Technical Education 2 cr.**

Identification, selection, and completion of a problem in career and technical education culminating in a Plan B paper.

Prerequisites: take EDUC-740. \$

**CTE-737 Competency-Based Education -- Career and Technical 2 cr.**

Fall

Competencies for career, technical and adult education programs and courses. Development of competency-based education performance indicators in all domains, a competency-based education management system, and basis for competency-based education evaluation.

**CTE-746 Seminar 1-3 cr.**

Special topics on current developments in the field. Each seminar devoted to a specific development to be indicated with sub-title and description.

**CTE-770 Thesis--Career and Technical Education 2-6 cr.**

Independent research under direction of investigation adviser. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for 2, 4, or 6 semester hours of credit in various terms with a final total of six. Consent of Program Director. Prerequisites: take EDUC-740. \$

**CTE-775 Workshop R 1-3 cr.**

Special topics providing hands-on experiential learning activities. Specific content and title to reflect the topic of the workshop.

**CTE-780 Internship, Career and Technical Education 4-8 cr.**

Fall and Spring Semesters

A planned, supervised experience for M.S. or Ed.S. candidates. To be completed at selected locations capable of providing appropriate experiences. Consent of Program Director.

**CTE-784 Internship -- Local Vocational Education Coordinator 4-8 cr.**

Fall and Spring Semesters

Supervised field practice in local career and technical education coordination to be completed at selected schools or CESA agencies capable of providing appropriate experiences. Consent of Program Director.

**CTE-792 Administration, Career and Technical Education 2 cr.**

Career, technical and adult school operation, legal status, policy making staff personnel, student personnel, programs, public relations, physical plant, business management. Prerequisites: take CTE-710.

**CTE-797 Field Experience 1 cr.**

**CTE-798 Field Experience 1-2 cr.**

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## **ECE Early Childhood Education**

**ECE-613 Lang Arts/Reading I: Birth-Kindergarten (3 cr.)**

Fall, Spring and Summer

Developmentally appropriate strategies and materials for planning, implementing, and evaluating language arts. Emphasis on developing emergent literacy skills and language arts with children Birth through Kindergarten.

**ECE-621 Administration of Early Childhood Programs (2 cr.)**

Fall

A study of program organization, program design, staffing, licensing, certification, equipment and facilities for operating early childhood education programs. Field trips required.

**ECE-626 Advanced Classroom Management and Guidance (3 cr.)**

Fall and Spring

Advanced study of managing early childhood classrooms. Management of the physical environment, instructional context, including large and small groups, and social context. Building a classroom community and encouraging collaborative learning. Assessing management of early childhood classrooms. Analysis of classroom management programs. Observation/participation in early childhood classrooms required. Prerequisites: take ECE-564.

**ECE-627 Child Abuse and Neglect (2 cr.)**

Fall

Systemic nature, forms and indicators, and prevention of abuse/neglect. Factors contributing to, and intervention skills in, coping with the effects of abuse/neglect on children and families at risk.

**ECE-635 Children, Families, Schools and Communities (3 cr.)**

Fall, Spring and Summer

Building family, school, and community partnerships to support children's wellbeing and educational success. Theories and processes used to establish positive home-school-community relations.

**ECE-664 Special Topics in Early Childhood Curriculum (1-3 cr.)**

Philosophy and methodology of early childhood education: problems confronting teachers. **R**

**ECE-766 Trends in Early Childhood Education (3 cr.)**

Overview of trends in early childhood education with emphasis on problems confronting teachers in establishing early childhood programs in communities and schools.

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# EDUC Education

## **EDUC-504 Secondary Curriculum Methods and Assessment 2 cr.**

Discipline-specific curriculum, methods, and assessment procedures for teaching content minors. Completion of Benchmark II.

## **EDUC-507 Applied Human Relations 2 cr.**

Fall, Spring and Summer

An experiential course focusing on major themes affecting human relations.

## **EDUC-536 Multiculturalism: Issues and Perspectives 2 cr.**

Fall, Spring and Summer

Intensive study of diversity in U.S. schools. Examination of the educational needs of students from various ethnic, cultural, religious, language and social class groups. Discussion of issues related to racism, sexism and oppression.

## **EDUC-576 Cross-Cultural Field Experience 1 cr.**

Fall, Spring and Summer

Supervised field experience in an educational setting with diverse learners to increase awareness, understanding, sensitivity, and appreciation for ethnic and cultural diversity. The acquisition of knowledge, skills, and professional dispositions necessary for educators to facilitate learning for all students are emphasized.

## **EDUC-580 Reading and Language Arts in Elementary Education 3 cr.**

Fall, Spring and Summer

Current philosophies in reading and language arts education, the centrality of language arts to the elementary curriculum and methodologies for the elementary classroom.

## **EDUC-581 Preclinical: Elementary Education Language Arts and Reading 1 cr.**

Fall, Spring and Summer

Supervised teaching experience in developing the prospective teacher's ability in elementary education language arts and reading skills. Prerequisites: take EDUC-580.

## **EDUC-582 Secondary Reading and Language Development 2 cr.**

Fall, Spring and Summer

Effective utilization of reading and language development methodologies in secondary content area classrooms.

## **EDUC-600 Workshop: Special Topics in Education 1-3 cr. R**

## **EDUC-601 Global Education Practicum 3 cr.**

Summer

Experiential learning opportunity to provide student with in-depth study of one or more of the global education sub-groups: human rights and social justice, human commonality and diversity, population demographics, planet management, global belief systems, economic systems, conflict and control, political systems, science and technology and/or sustainable development.

## **EDUC-602 Global Perspectives for Educators 3 cr.**

Fall and Spring

Strategies for infusing global perspectives into the classroom for those working in globalized organizations. Methodology, materials and instructional strategies necessary for effective implementation of global education in schools and individual classrooms as well as within global organizations. Topics/issues related to globalization to develop a foundation from which teachers and other leaders in organizations can draw ideas for their specific needs.

## **EDUC-603 Educational Psychology of the Adult Learner 2 cr.**

Spring and Summer

.Psychological principles and theoretical framework guiding the educational process for adult learners. Special focus on planning and evaluating instruction while utilizing active learning to build strong learning communities.

## **EDUC-615 Classroom Management 2-3 cr.**

Technique and theory for motivating Pre-K through grade 12 age students to manage their own behaviors, including preventive discipline, behavior management, classroom environment, classroom climate, effective communication, conflict resolution, and peer mediation.

**EDUC-616 Conflict Resolution and Crisis Management for Educators 2 cr.**

Conflict mediation and crisis intervention strategies in school settings.

**EDUC-630 Ojibwe Lifeways 2-4 cr.**

Summer

In depth, interactive study of Ojibwe culture within a Wisconsin reservation community. \$

**EDUC-709 Middle Childhood Education 2 cr.**

Developmental expectations, management and consultation strategies, and appropriate dispositions for teaching children ages 9 through 11. Instructor's consent required.

**EDUC-710 Middle Childhood: Teaching Science 2 cr.**

Curriculum, methods and assessment in middle childhood science teaching for children ages 9 through 11. Knowledge and performance in planning, classroom management, instruction, and professional responsibilities of reflection and communication. Instructor's consent required.

**EDUC-711 Middle Childhood: Teaching Mathematics 2 cr.**

Curriculum, methods and assessment in middle childhood mathematics teaching for children ages 9 through 11. Knowledge and performance in planning, classroom management, instruction, and professional responsibilities of reflection and communication. Instructor's consent required.

**EDUC-712 Middle Childhood: Teaching Social Studies 2 cr.**

Curriculum, methods and assessment in middle childhood social studies teaching for children ages 9 through 11. Knowledge and performances in planning, classroom management, instruction, and professional responsibilities of reflection and communication. Instructor's consent required.

**EDUC-713 Middle Childhood: Teaching Reading/ Language Arts 2 cr.**

Curriculum, methods and assessment in middle childhood reading/language arts teaching for children ages 9 through 11. Knowledge and performance in planning, classroom management, instruction and professional responsibilities of reflection and communication. Instructor's consent required.

**EDUC-720 Linguistic and Cultural Immersion in Schools 3 cr.**

Core problems in service delivery to English Language Learner children, youth, and their families. Contemporary issues and theories related to the impact of cultural and linguistic diversity on the cognitive, social, and emotional development of children.

**EDUC-726 Administration 2-3 cr.**

Philosophy and principles underlying organization and operation of public education on the local, state and national levels in the United States. Examinations of prevailing practices and current problems of school management.

**EDUC-727 Supervision of Student Teachers 2 cr.**

Fall, Spring and Summer

Online, interactive course that examines the role of the cooperating school and teacher in orienting, guiding and assessing student/intern teachers.

**EDUC-729 Introduction to Educational Research 1 cr.**

Fall, Spring and Summer

Overview of educational research; identification of research topics and development of a research proposal.

**EDUC-735 Problems in Education 2 cr.**

Fall, Spring and Summer

Identification, selection and completion of a research problem in education culminating in a Plan B research paper. Consent of Program Director. Prerequisites: take EDUC-740, EDUC-741, or EDUC-742. \$

**EDUC-740 Research Foundations 4 cr.**

Fall, Spring and Summer

This course serves as an introduction to basic concepts and principles in educational research. The course utilizes mastery grading and elements of individualized instruction. The course functions to help prepare the student for his own graduate research experiences and also to prepare him to be an articulate consumer of research upon completion of the course.

**EDUC-741 Education Grant Proposal Development 3 cr.**

Principles of grant proposal writing to support educational research needs. Prerequisites: take EDUC-729 or TECED-739.

**EDUC-742 Program Evaluation 3 cr.**

Surveys theory and practice of evaluating the effectiveness of a variety of human-service delivering systems, including education. Develops applied competencies in analyzing values and needs of decision makers and articulation and assessment of program objectives both process and product). Emphasis on building efficient, ongoing evaluation systems. Equivalent to 421-742.

**EDUC-744 Seminars in Education 1-3 cr.**

Examination of issues concerning contemporary education with an emphasis on confronting teachers working in the schools. **R**

**EDUC-745 Assessment of Learning 3 cr.**

Fall and Spring

Assessment for instructional decision making. Historical perspectives, trends, current research, methods and purposes of assessing learners. Principles and appropriate techniques used in assessing learners. Applied practice in using formative assessment strategies to examine the effects of instruction on learning. Role of assessment of student learning in professional development planning.

**EDUC-750 Curriculum Theory and Practice 2-3 cr.**

Fall, Spring and Summer

A study of curriculum theory and its application. An analysis and development of a rationale, writing educational objectives, identifying a body of knowledge, specifying methodology, and conducting curriculum evaluation.

**EDUC-760 E-Learning for Educators 3 cr.**

Historical background and current trends in online learning. Concepts and foundations of best practices for successful teaching online. E-learning theory, principles, learning management systems, and web-based technology tools.

**EDUC-761 Creating Collaborative Communities in E-Learning 3 cr.**

Concepts, methods and research for creating and facilitating a collaborative online community of practice. Dynamics of facilitated synchronous and asynchronous discussion, questioning skills, conflict resolution, netiquette, and collaborative learning through problem-based scenarios, simulations, and hands-on practice moderating online discussions.

**EDUC-762 Assessment in E-Learning 3 cr.**

Performance-based assessment. Summative and formative feedback methods to assess student learning in the online classroom. Best practices for grading procedures, prevention of plagiarism in the digital environment, electronic evaluation tools, using electronic record-keeping systems and methods for evaluating e-portfolios, posted discussions, and group projects.

**EDUC-763 Instructional Design For E-Learning 3 cr.**

Evaluation, discussion and application of instructional design theories and principles for online learning. Examination of hybrid, self-paced and facilitated online learning experiences delivered via course management systems. Scenario-based simulations and case study analysis. Creating interactive multimedia learning objects. Application of accessibility and usability guidelines in web-based course design.

**EDUC-764 E-Learning Practicum 3 cr.**

Practicum in teaching online with a cooperating online instructor. Application of online pedagogy and technology evaluated through observation, discussion and reflections. Completion of a professional development plan and an e-portfolio of evidence of attainment of online learning standards. Instructor's consent required.

Prerequisites: take EDUC-760, EDUC-761, EDUC-762, and EDUC-763.

**EDUC-765 Trends and Issues in Instructional Design 3 cr.**

In-depth comparison of current instructional design theories and models, principles of adult learning, variables that affect adult learning, techniques for stimulating and sustaining learner motivation, reinforcement of learning, skill transfer, and use of cognitive task analysis to determine instructional content.

**EDUC-766 Instructional Strategies and Assessment Methods 3 cr.**

Development of instructional goals, objectives and assessment of outcomes. Methods for assessing learner performance and mapping appropriate assessment methods to instructional strategies and learning objectives. Performance-based assessment and evaluation tools to assess learner performance. Design of formative and summative evaluation methods. Prerequisites: take EDUC-765.

**EDUC-767 Designing Computer-Based Training (CBT) 3 cr.**

Just-in time scenario-based modular development, user interface design, visual design, usability testing, and execution of common instructional strategies employed by self-paced products. Research, trends and standards in computer-based training; development of reusable learning objects using multimedia software.

Prerequisites: take EDUC-766.

**EDUC-768 Project Management for Instructional Design 3 cr.**

Examination of the initiation, planning, and closure of instructional development projects and practical knowledge on managing project scope, work breakdown structure, schedules, and resources including budgeting. Analysis of instructional development project life cycle.

Prerequisites: take EDUC-767.

**EDUC-770 Thesis 2-6 cr.**

Fall, Spring and Summer

Independent research under direction of investigation adviser. Selection of problem, review of literature, planning and conducting research, interpretation of findings and preparation of final paper according to thesis standards. Student may enroll for two, four or six semester hours of credit in various terms for a final total of six. Consent of program director.

Prerequisites: take EDUC-740. **R \$**

**EDUC-780 Action Research 4 cr.**

Fall and Spring

Action Research as a tool for instructional decision making. Historical perspectives, trends, current research, methods and purposes of action research. Principles and appropriate techniques used in conducting action research. Field-based practice in using action research to examine the effects on instruction on learning. Prerequisites: take EDUC-745

**EDUC-782 Instructional Analysis 4 cr.**

Spring

Social/political forces utilized in planning and implementing instruction. Principles and strategies for a self-analysis of teaching behavior. Examination of the social aspects of teacher learning and knowledge production and the relationships between learning and instruction.

**EDUC-790 Professional Portfolio Development 2 cr.**

Principles of professional portfolio development for educators.

Prerequisites: take EDUC-729.

**EDUC-799 Independent Study 1-3 cr. R****EDUC-816 Instrumentation for Research 3 cr.**

Basic concepts in the areas of validity and reliability will be studied and applied to the design of instruments. Emphasis will be placed on conceptualizing the constructs or characteristics to be measured. Techniques of item writing, item analysis, determining reliability, and scaling will be covered, including such ideas as acquiescent set, item difficulty and discrimination. The student will engage in the study of procedures and techniques for gathering, analyzing and reporting data and findings as applied to his proposed field study.

**EDUC-895 Field Study in Professional Education 2-6 cr.**

Supervised study which provides the graduate student with the opportunity to: 1) explore in-depth the body of knowledge associated with a selected problem in professional education, 2) provide an educational experience for implementing this knowledge into a selected institutional setting, and 3) devise methods to determine if the implementation is or will be successful. Consent of program director. **\$**

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## **EDPSY Educational Psychology**

**EDPSY-730 Advanced Psychology of Learning for Instruction (2 cr.)**

Theories of learning with applications and implications to the learning environment. Biological bases and psychoeducational models with an examination of instruction and the learning conditions and strategies that promote the acquisition and transfer of knowledge in children, adolescents, and adults.

**Psychology of Development (3 cr.)**

Study of issues and methods in developmental psychology. Perceptual, language, cognitive, social, emotional, and personality developmental research and theories. Examination of biological underpinnings, interactive effects of biology and the environment on growth and learning from prenatal development to adulthood.

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## **ELEC Electricity/Electronics**

**ELEC-595 Seminar 1-2 cr.**

Specific content is designed to upgrade competencies of participants. Content will change to reflect current state of the art in electricity/electronics or power mechanics. R

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## **ENGGR Engineering Graphics**

**ENGGR-595 Seminar 1-2 cr.**

(Title will reflect specific design, research and development content.) Current and projected communication methods, concepts, technologies and innovations in design, research and development. R

**ENGGR-600 Workshop: 1-3 cr.**

Special topics in design, research and development, providing hands-on or experiential learning activities. Specific content and title to reflect the topic of the workshop. R

**ENGGR-636 Computer Assisted Design Problems 3 cr.**

Advanced CADD applications. Construct three dimensional wireframe drawings. Perform finite element analysis on select components. Customize software for specific applications. Customize software for specific applications. In-depth analysis of CADD applications in mechanical and architectural design.

**ENGGR-666 3-D Computer Modeling and Rendering 3 cr.**

Development of three-dimensional computer models and computer graphic images. Includes 3-D surface modeling and rendering.

**ENGGR-792 Special Projects in Drafting / Product Design 2-6 cr.**

Substantive study and activity for specialists in the design, research and development field to include

library work, field observation, laboratory work planned by the student and approved and supervised by a faculty consultant in design, research and development. Preparation of a technical report may be repeated for a maximum of six semester credits. R

## ENGL English

### **ENGL-512 International Technical Communication** (3 cr.)

Fall, Spring and Summer

Theories and practical approaches to writing international technical documents, including globalization, localization, and translation preparations and procedures. Extensive use of case studies and cultural models. Scholarship in international technical communication and its relevance to workplace practice will be evaluated.

### **ENGL-615 Technical Writing** (3 cr.)

Fall, Spring and Summer

On-the-job writing for business and industry; reports, letters and other documents.

### **ENGL-625 Usability Design and Testing** (3 cr.)

Spring

Provides hands-on ability to plan, design, and conduct tests. Measures effectiveness and efficiency of written and online documents. Examines methodology and application of usability testing to demonstrate its value and importance.

Prerequisites: take ENGL-415.

### **ENGL-635 Writing Technical Manuals** (3 cr.)

Fall, Spring and Summer

Production of a technical manual-planning procedure, collecting information, analyzing audience, writing and field testing.

### **ENGL-637 Technical Writing Practicum** (1-3 cr.)

Fall, Spring and Summer

Plan, write and produce a technical document for a client. Principles of document design, clear writing for a specific audience, methods of determining client needs, and methods of producing the final document. **R**

### **ENGL-700 Theory and Research in Technical Communication** (3 cr.)

Theoretical concepts and research design in technical and professional communication.

### **ENGL-720 Rhetorical Theory** (3 cr.)

Classical and modern theories of rhetoric and rhetorical analysis.

### **ENGL-730 User-Centered Research for Technical Communicators** (3 cr.)

Theories and practice of user-centered research in technical and professional communication. Emphasis on applying user-centered research methods in a variety of writing and communication contexts.

### **ENGL-735 Field Project in Technical and Professional Communication** (3 cr.)

Completion of an original field project for business and industry, culminating in a deliverable for client and project report presented in a research project format.

Prerequisite: take ENGL-700.

### **ENGL-740 Visual Rhetoric for Technical and Professional Communicators** (3 cr.)

Rhetorical theory and technical communication research in document design and related visual communication principles. Strategies for designing documents, data displays, and other products used by technical communicators in the workplace.

### **ENGL-745 Communication Strategies for Emerging Media** (3 cr.)

Emerging media and digital technologies as catalysts of cultural change, and how such changes have affected the way technical communicators write, share, and consume materials.



**ENGL-750 Special Topics in Technical and Professional Communication** (3 cr.)  
In-depth study of special topics in the field of technical and professional communication.

**ENGL-770 Technical and Professional Communication Thesis** (1-6 cr.)  
Selection, investigation, and completion of an original research project, culminating in a paper prepared according to thesis standards describing the problem investigated, literature review, methods, and interpretation of findings.  
Prerequisite: take ENGL-700.

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## FCSE Family and Consumer Sciences Education

**FCSE-500 Externship: Family and Consumer Sciences Community Education** (4-8 cr.)  
Fall and Spring  
Practicum in one or more of the following family and consumer sciences education programs: extension services, elementary education, post- secondary education, occupational teaching experience and community educational services. Approval of graduate program director required if taken for graduate credit. Consent of program director.

**FCSE-503 Family and Consumer Sciences Education in the Middle and Elementary Schools** (3 cr.)  
Spring  
Develop techniques, materials and curriculum concepts in family and consumer sciences education with application of human growth and development principles for teaching in middle and elementary school.

**FCSE-520 Vocational Programs in Family and Consumer Sciences Education** (2 cr.)  
Fall and Spring  
Techniques, materials and curriculum for family and consumer sciences wage-earning programs in secondary and post-secondary schools; preliminary procedures for program development.

**FCSE-580 Consumer Economics** (3 cr.)  
Spring  
Personal and family consumer economics for family and consumer education programs; management of human and non-human resources in achieving personal, family and community goals.  
Prerequisites: take ECON-201 or ECON-210.

**FCSE-585 Family Housing** (3 cr.)  
Fall  
Individual/family's housing needs and resources as a basis for family and consumer education programs. The impact of historical, environmental, social, cultural, and technological, aesthetic, and design influences.

**FCSE-651 Family Life Education Programs** (2 cr.)  
Fall  
Development of family life education programs including methods, materials and techniques for teaching family relationships and child development at the secondary level. Instructor's consent required.

**FCSE-708 Curriculum Studies in Family and Consumer Sciences Education** (2 cr.)  
Principles of curriculum construction. Review of recent literature on curriculum development. Evaluation of curriculum practice and techniques.

**FCSE-710 Applied Evaluation in Family and Consumer Sciences** (2 cr.)  
Theory and application of principles in planning evaluation techniques in family and consumer sciences to assess behavioral changes in the cognitive, affective and psychomotor domains.

**FCSE-720 Special Topics in Family and Consumer Sciences** (1-2 cr.)  
Consideration of problems in contemporary living that are affecting family and consumer sciences education.

**FCSE-725 Graduate Internship in Family and Consumer Sciences Education (8 cr.)**

Fall and Spring

A clinical assignment in a school for one semester during which time the student integrates in-depth academic knowledge and pedagogical skill. Consent of program director.

**FCSE-735 Problems in Family and Consumer Sciences (2 cr.)**

Identification, selection and completion of a problem in family and consumer sciences, culminating in a Plan B paper.

Prerequisites: take EDUC-740. \$

**FCSE-770 Thesis-Family and Consumer Sciences Education (2-6 cr.)**

Independent research under direction of investigation adviser. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of method of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for 2, 4, or 6 semester hours of credit in various terms with a final total of 6. Consent of program director.

Prerequisites: take EDUC-740. R\$

**FCSE-797 Field Experience in Family and Consumer Sciences Education (2 cr.)**

Field experience related to family and consumer sciences education skills and knowledge used in teaching wage-earning courses at secondary level.

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## FN Food and Nutrition

**FN-510 Lifespan Nutrition 3 cr.**

Nutrition concepts and concerns associated with each lifespan stage; integration of social, psychological, cultural, economic, and legislative factors to develop issue-centered approaches to meet nutrition needs.

**FN-512 Nutritional Assessment 2 cr.**

Fall, Spring and Summer

Introduction to basic components of nutritional assessment as applied to individuals.

**FN-520 Advanced Nutrition 3 cr.**

Principles of human nutrition applied to individual, family, community and world problems.

**FN-525 Special Topics in Food and Nutrition 1-3 cr.**

Fall

Study of special topics in food and nutrition. R \$

**FN-530 Institutional Menu Planning 3 cr.**

Fall and Spring

Principles of cycle menu planning, design and marketing for institutional food settings, which includes culinary skills, basic food preparation and modified menus to meet the special dietary needs of an individual or group.

Consent of instructor required.

**FN-542 Advanced Foods 3 cr.**

Fall

Comparative studies of food selection and preparation; appraisal of foods.

**FN-550 Food Processing 3 cr.**

Spring

Industrial methods used to prepare and preserve food.

**FN-555 Sports Nutrition 3 cr.**

Nutritional and metabolic requirements of physical activity. Metabolic fuel utilization during exercise and physiological adaptations to exercise training will be discussed. The health and well-being benefits of an optimal diet-exercise regime will be emphasized.

**FN-560 Nutrition Counseling: A Team Approach 3 cr.**

Inter-disciplinary team approach to individual and group client-centered nutrition counseling which includes assisting and advising clients on dietary information. Skills and techniques based on nutrition counseling theories that are most useful to registered dietitians in enhancing quality of life and planned nutrition intervention.

Prerequisites: take FN-512.

**FN-600 Food Quality 4 cr.**

The applications of qualitative and quantitative tools in conjunction with statistical methods to implement quality management in the food industry.

Prerequisites: consent of the instructor.

**FN-606 Nutrition Education 3 cr.**

Fall and Spring

Nutrition education as planned behavioral change: problems and solutions in instructing various populations; identification, development and evaluation of nutrition resources.

**FN-610 Food and Nutrition Policy Regulation and Law 3 cr.**

Food and nutrition policy development and evolution. Key acts and agencies governing food regulation and law. Process of creating or changing law. Compliance and enforcement rules in inspection, labeling, export and import. Administrative practice in food law including proceedings and judicial review.

**FN-613 Maternal and Child Nutrition 3 cr.**

Fall

Application of principles to maternal, infant, child and adolescent nutrition.

**FN-614 Catering 3 cr.**

Theory and application of operational and managerial principles for on/off-premise catering for special events. Cannot be taken for credit by students who have previously taken HT-624.

**FN-615 Nutritional Issues in Gerontology 3 cr.**

Theory and relationships of nutrition, longevity and aging. Food and nutrition legislation for the elderly--theory and implementation. Nutritional implications of acute and chronic disease states common among the elderly.

Prerequisites: take FN-520 and CHEM-511.

**FN-617 Medical Nutritional Therapy I 3 cr.**

Principles and methods for use in certain pathological conditions or chronic and acute disease processes. Incorporates principles of medical nutritional therapy in nutrition assessment, diet prescription, medications, care plans and documentation.

Prerequisites: take FN-512.

**FN-618 Medical Nutritional Therapy II 4 cr.**

Fall and Spring

Principles and methods for use in certain pathological conditions or chronic and acute disease processes. Incorporation of the principles of nutrition assessment, diet prescription, medications, care plans, and documentation into the management of disease processes.

Prerequisites: take FN-512.

**FN-620 Food Styling 1-3 cr.**

Fall and Summer

Food as media for artistic expression; effective use of color, form and texture. **R**

**FN-631 Readings in Food Science and Nutrition 1-2 cr.**

Critical reading, evaluating, and reporting from pertinent current journals and other publications. **R**

**FN-638 Experimental Foods 3 cr.**

Fall and Spring

Experimentation with selected food materials, techniques and equipment; directed study in individually chosen area.

**FN-650 Food Engineering 3 cr.**

Fall

Application of pertinent chemistry, physics and mathematics principles to food processing.

**FN-661 Multicultural Aspects of Food and Nutrition Patterns 3 cr.**

Food and nutrition patterns as influenced by social, religious, geographical, economic and political factors. Cultures emphasized include Native American, African American, Hispanic and Asian American. Food as a means of cross-cultural communication.

**FN-670 Food Distribution Operations and Control 3 cr.**

Current trends and management strategies in the distribution of food and beverages, from manufacturer to consumer.

**FN-680 Research Critiques in Food Microbiology 3 cr.**

Research evidence examining mechanistic concepts in microbial food spoilage, infectious disease and molecular epidemiology. Methods of assessing safety risks and design of interventions to manage risks in food processing environments. Prerequisites: CHEM-511 or by permission of instructor.

**FN-701 Trends in Nutrition 2 cr.**

Practical application of recent developments in the field of nutrition. **R**

**FN-710 Clinical Nutrition 3 cr.**

Innovative approaches in nutrition therapy. Clinical experience offered in area health care facilities. Prerequisites: take FN-618.

**FN-712 Practicum in Community Nutrition Programs 1-2 cr.**

Advanced experience in community nutrition programs. Individual project in nutrition counseling, identification, delivery and evaluation of nutrition and appropriate food services.

Prerequisites: take FN-606 and FN-618. **R**

**FN-715 Menu Analysis and Planning 3 cr.**

Principles of planning and designing menus for production and sales in commercial and institutional food services. Special emphasis is given to computerization of the menu planning process.

**FN-720 Workshop in Foods 1 cr.**

Discussion of current issues in food science and technology, food marketing and management, and for developing strategies for conducting and disseminating food related research. Includes critical analyses of variety of food oriented research projects. **R**

**FN-721 Workshop in Nutrition 1 cr.**

Individual and group investigations and solutions of problems in nutrition science and nutrition education. **R**

**FN-735 Problems in Food Science and Nutrition 2 cr.**

Identification, selection and completion of a problem in food science and nutrition, culminating in a Plan B paper and oral presentation of the paper.

Prerequisites: take EDUC-740. **\$**

**FN-736 Micronutrients 3 cr.**

Absorption and intermediary metabolism of minerals, vitamins and other organic compounds with nutritional relevance. Analysis and application of current research as it relates to these micronutrients are emphasized.

**FN-737 Macronutrients 3 cr.**

Digestion, absorption, transport, metabolism, health concerns, functions and micronutrient interrelationships to water, carbohydrate, lipid and protein are the focus of this course. Analysis and application of current research related to these macronutrients are emphasized.

**FN-738 Medical Nutrition for the Geriatric Person (3 cr.)**

Medical nutritional care of the long term care, home health, and extended care for the elderly, geriatric patient/individual/person. Regulatory compliance, nutrition documentation, nutrition assessment and standards of nutritional care.

Prerequisites: take FN-615, FN-617, or FN-618 or consent of instructor.

**FN-740 Food Preservation Technology 3 cr.**

Application and evaluation of the technology of food preservation to selected areas in food science.

Prerequisites: take CHEM-511.

**FN-742 Sensory Evaluation of Food 3 cr.**

Selection, identification and measurement of food evaluation tools using consumer and laboratory sensory panels.

**FN-746 Food Innovations 2-3 cr.**

Effects of food industry innovations on preparation and service of foods. \$

**FN-750 Food Packaging 3 cr.**

Fall

Interrelationship of food and packaging. Technical content appropriate to solve complex and interrelated problems in food packaging research and development. Instructor's consent required.

**FN-756 Advanced Experimental Food 3-4 cr.**

Fall and Spring

Principles of research methods applied to directed investigations in food preparation.

Prerequisites: take FN-638.

**FN-770 Thesis--Food Science and Nutrition 1-6 cr.**

Independent research under direction of investigation adviser. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of method of attack, conduct of research, interpretation of findings, preparation of the final paper according to thesis standards and oral presentation of the research. Student may enroll for variable semester hours of credit in various terms with a final total of six. Consent of program director.

Prerequisites: take EDUC-740. **R \$**

**FN-865 Supervised Practice in Medical Nutrition Management 3-14 cr.**

Supervised practice experience in clinical, community nutrition and foodservice management. Structured experiences are provided at hospital, clinic, community and public school sites. Successful completion of more than 900 hours for 18 credits meets the American Dietetic Association requirement for a supervised practice program.

Prerequisites: FN-710 and FN-606 and FN-712, minimum grade B for each course. **R**

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## GCM Graphic Communications Management

**GCM-500 Workshop (1-3 cr.)**

Fall, Spring and Summer

Special topics in graphic communications, providing hands on or experiential learning activities. Specific content and title to reflect the topic of the workshop. **R**

**GCM-551 Cross-Media Marketing Systems (3 cr.)**

Fall and Spring

Software and systems used to plan and produce personalized and integrated cross-media (Web, print, PDF, e-mail) marketing/promotion communication. PDF editing and repurposing, digital asset management, databased, layout issues, dynamic content, scripting, automation, variable data digital printing and personalization, digital distribution alternatives, and web storefronts.

**GCM-562 Screen and Speciality Print Manufacturing (3 cr.)**

Fall and Summer

Applications and techniques for screen and specialty printing on a variety of substrates. Issues and process-control concerns related to these image transfer methods. \$

**GCM-563 Package Printing (3 cr.)**

Fall and Spring

Production of graphics on labels, cartons, and flexible packages with an emphasis on flexography and rotogravure. Present and future technology trends in package printing. \$

**GCM-580 Graphic Communicaitons Estimating and Scheduling (3 cr.)**

Fall and Spring

Graphic communications workflow management issues including cost of production or services, estimating practices, production scheduling and coordination of both print and non-print graphic communications projects.

**GCM-643 Graphic Communications Practicum (3 cr.)**

Fall, Spring and Summer

Integration of all graphic communications manufacturing processes in the design and production of print and non-print graphic products and services for clients in the university community. Special emphasis on the process and workflow management roles of estimating, customer service, scheduling, planning, production supervision and quality control. **R**

**GCM-643 Graphic Communications Practicum (3 cr.)**

Fall, Spring and Summer

Integration of all graphic communications manufacturing processes in the design and manufacture of printed products. Special emphasis on the process and workflow management roles of estimating, customer service, scheduling, planning, production supervision and quality control. Instructor's consent required. **R**

**GCM-645 Publication Production (3 cr.)**

Fall, Spring and Summer

Cross-discipline work teams experience integration of skills developed in English, speech, art, graphic communications, industrial management and business courses to design, plan, schedule, produce and distribute print and digital versions of a magazine/newsletter.

**GCM-646 Digital Imaging (3 cr.)**

Fall and Spring

Preparation, capture and manipulation of digital information for current and emerging digital distribution technologies. Repurposing of print media files for alternative distribution systems.

**GCM-680 Graphic Communications Customer Service And Administration (3 cr.)**

Fall and Spring

Administrative, management and leadership roles in directing functional areas of graphic communications companies including sales, customer service, management, human resources, and training. Senior level or higher.

**GCM-695 Graphic Communications Management Seminar (3 cr.)**

Fall, Spring and Summer

Overview of the graphic communications industry; its size, market segments, profitability and organization. Research and analysis of company annual reports. Strategic planning, management and leadership, industry trends and forecasts, trade organizations, news and other information sources. Impact of technology, global issues, and competing information distribution channels. **R**

**GCM-792 Special Issues in Graphic/ Telecommunications (2-6 cr.)**

Fall, Spring and Summer

Substantive study and activity for specialists in the graphic/telecommunications fields to include library work, field observation, laboratory work planned by the student and approved and supervised by a faculty consultant in graphic/telecommunications. Preparation of a technical report. May be repeated for a maximum of six semester credits. Prerequisites: take TECED-739. **R**

**GCM-797 Field Experience (1 cr.) **R****

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## **GEM Golf Enterprise Management**

**GEM-645 Event Management (3 cr.)**

Planning, organizing and the management of events will be investigated for the hospitality, tourism and golf industries. Emphasis is placed on the design, internal management systems and post event evaluation.

## HDFS Human Development and Family Studies

### **HDFS-510 Family Stress, Coping and Adaptation** (1 cr.)

Fall, Spring and Summer

Impact of family development and stress on individual and family well-being.

### **HDFS-513 Parent Education and Involvement** (2 cr.)

Fall and Spring

Parent groups: training of leaders, survey of literature.

### **HDFS-520 Divorced, Single Parent and Remarried Family** (2 cr.)

Fall and Spring

Trends and issues in divorce, single parenting and remarriage related to effects on adults, children and society.

### **HDFS-525 Human Development: Middle Childhood and Adolescence** (3 cr.)

Fall and Spring

Empirical study of physical, intellectual, social and emotional development of children.

### **HDFS-530 Human Development: Early and Middle Adulthood** (3 cr.)

Fall and Spring

Study of adults in the family context during the early and middle years.

### **HDFS-532 Death and Bereavement** (3 cr.)

Spring and Summer

Significance of death and bereavement for the American culture, individual and family. Special consideration given to major tasks of grieving for children and adults.

### **HDFS-535 Seminar: Culturally Diverse Individuals and Families** (2 cr.)

Fall and Spring

Study of cultural, ethnic, racial and economic influences on individuals and families in the United States. Emphasis on knowledge and skills to improve human relations in settings serving individuals and families.

### **HDFS-536 Experience: Developing Cultural Competence** (2 cr.)

Fall and Spring

Fifty hours experience interacting with individuals and/or families of an ethnic minority group whose background the student does not share; and/or with foreign-born persons of color, persons with disabilities, sexual minorities and persons of various ages and socio-economic groups.

### **HDFS-540 Human Development: Late Adulthood** (3 cr.)

Fall and Spring

Survey of the field of gerontology focusing on what it means to grow old in the United States from a systemic perspective. Multicultural attitudes toward aging; the psychological, physical, social and economic needs and problems of the older population are addressed. Consideration will be given to the personal, familial, environmental and social resources of the older population.

### **HDFS-541 Family Caregiving to Dependent Elders** (1 cr.)

Fall and Spring

Unique challenges confronting adult children who provide care to aging parents. Government, agency, workplace and family policies and practices promoting and/or undermining family strengths and well-being.

### **HDFS-545 Health Care Dilemmas and Decisions for Families** (3 cr.)

Fall and Spring

Bioethical issues facing U.S. families. Selected issues provoke deep and troubling questions that will be addressed from a multidisciplinary perspective through readings, student-led discussion, lectures, and case reviews.

**HDFS-550 Women's Relationships in Later Life (3 cr.)**

Women's experiences in later life. Impact of race, culture, class, sexual orientation upon aging. Images of aging women in contemporary literature and the media. Older women's experiences in familial relationships and friendships.

**HDFS-552 Sexual Minority Individuals and Families (2 cr.)**

Contextual knowledge and understanding of sexual minority individuals and families.

**HDFS-560 Work and Family Issues (3 cr.)**

Spring

Effects of employment and family careers and varying patterns of combining work and family.

**HDFS-564 Sibling Relationships (3 cr.)**

Spring

Sibling relationships across the life course, examining the issues, processes and dynamics affecting these bonds.

**HDFS-565 Family Resource Management (3 cr.)**

Fall and Spring

Examination of individual and family use of resources to attain goals. Exploration of methods for working with individuals and families regarding family resource management. Identification of socio-cultural influences of poverty and decision making.

**HDFS-575 Grantsmanship For Nonprofits (1-2 cr.)**

Explore the availability of foundation grant money for nonprofit organizations. Designed to give the beginning grant writer an overview of grant purposes, foundation funding sources, proposal development and writing.

**HDFS-595 Special Topics in Human Development (1-2 cr.)**

Special topics in human development; repeatable for different topics. **R**

**HDFS-623 Spirituality Across the Lifespan (2 cr.)**

Seminar discussion of autobiographical and biographical accounts of individual's spiritual experiences, beliefs and spiritual development over the life cycle.

**HDFS-626 Special Topics in the Study of Family Life (1-3 cr.)**

Family life programs and literature; individual study of problems of personal or professional interest.

**HDFS-640 Child and Family Law (3 cr.)**

Fall and Spring

Legal issues affecting children and families.

**HDFS-642 Geriatric Functional Assessment (4 cr.)**

Fall

Multi-disciplinary assessment applied to elderly at critical transition points. Assessment of social and economic status, functional status (activities of daily living and instrumental activities of daily living), mental health, and environmental characteristics. Explore various measurement instruments. Background check required.

Prerequisites: take HDFS-540.

**HDFS-650 Family Policy (3 cr.)**

Fall and Spring

Content, methods and process of assessing impact of public policy on children and families.

**HDFS-654 Suicide and the Family: Family and Community Intervention (1 cr.)**

Analysis of attempted and completed suicides from an interdisciplinary perspective. Forms of intervention, with emphasis upon family therapy, are compared, contrasted, and evaluated for suitability.

**HDFS-656 Abuse and the Family (3 cr.)**

Fall and Spring

Definition and analysis of types of abuse in family context. Interrelationship of victims, perpetrators, other family members, helping professionals, social context. Risk factors, effects, reporting and recovery.

**HDFS-703 Child and Adolescent Development Seminar (3 cr.)**

Advanced seminar in various aspects of child and adolescent development.



**HDFS-704 Child and Family Services (2 cr.)**

Summer

Review and analysis of the historical development and statutory base of child and family services as well as the social values, issues and trends that shape them.

**HDFS-707 Issues and Problems in Parent Education (2 cr.)**

A study of the issues and problems of parent groups and the training of parent-group leaders. Instructor's consent required.

**HDFS-715 Theories of Family Processes (2 cr.)**

Fall and Summer

Advanced analysis of family interaction theory. Emphasis is on normal family processes as they apply to the practice of marital and family intervention.

**HDFS-728 Contemporary Family Issues (3 cr.)**

Summer

Contemporary family issues and trends addressing continuity as well as the changing nature of relationships and families. Emphasis on family change within the larger context of ecological, demographic and economic change.

**HDFS-735 Problems in Family Studies and Human Development (2 cr.)**

Identification, selection and completion of a problem in family studies and human development, culminating in a Plan B paper. \$

Prerequisites: take EDUC-740.

**HDFS-740 Issues in Family Life Education (2 cr.)**

Summer

Review of community-based programs for family and human development issues across the lifespan with consideration for personal philosophy, theory, research, development and evaluation of existing program models.

**HDFS-742 Lifespan Family and Human Development Seminar (2-3 cr.)**

Fall, Spring and Summer

Human development theory; research, changing trends and issues are explored with focus upon family life cycle variations. Emphasis is given to the application of scientific knowledge to select issues and thematic narratives of lifespan development as well as to information regarding child development in families and their sociocultural contexts.

**HDFS-746 Theory Based Qualitative and Quantitative Research Methods (3 cr.)**

Summer

Fundamentals of family and developmental research. Focus on qualitative and quantitative research designs, the role of theory, methods of data collection and analysis, and unique factors associated with family research. Preparation for completion of the comprehensive graduate project.

**HDFS-770 Thesis-Family Studies and Human Development (2-6 cr.)**

Independent research under direction of investigation adviser. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of method of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for 2, 4, or 6 semester hours of credit in various terms with a final total of 6. Consent of program director. R \$

Prerequisites: take EDUC-740.

**HDFS-797 Field Experience in Human Development and Family Studies (2 cr.)**

Field experience related to family and consumer sciences education skills and knowledge used in teaching wage-earning courses at secondary level.

**HDFS-799 Independent Study(1-3 cr.) R**

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## HLTED Health Education

**HLTED-560 Personal Health and Fitness** (3 cr.)

Spring and Summer

Analysis of consequences of individual decisions and lifestyle choices related to personal health and well being.

**HLTED-575 Methods in Health Education** (2 cr.)

Fall

Teaching methods related to the content of elementary and secondary school health curriculum. Individual presentations and teaching of health lessons.

**HLTED-576 Organization and Administration of Health Education** (3 cr.)

Spring and Summer

Planning, promoting, and implementing comprehensive health education programs at the elementary, middle, and secondary levels. Needs assessment; curriculum development and coordination; public relations; and the development of cooperative relationships with parents, private business, and voluntary and community health agencies.

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## HT Hospitality and Tourism

**HT-515 Gaming Management** 3 cr.

Overview of casino gaming operations in the hospitality and tourism industry from a global and local perspective. Must be 18 years or older. \$

**HT-516 Casino Operations Management** 3 cr.

Functions and transactions associated with the gaming operations environment within a resort casino. Must be 18 years or older.

**HT-517 Psychosocial Issues in Gaming** 3 cr.

A hospitality management and societal perspective of the pros and cons of gambling entertainment. Must be 18 years or older.

**HT-523 Food Service Equipment** 2 cr.

Factors affecting design, selection, physical facilities and utilities involved in foodservice equipment.

**HT-524 Quantity Food Production** 4 cr.

Quantity food production management concepts; menu planning, work production schedules, production analysis, food and labor cost controls, and sales projections, crisis and service management techniques; lab work in quantity food production and service; recipe development and introduction to productivity and work simplification concepts.

**HT-526 Introduction to Wines and Spirits** 3 cr.

Applied and historical knowledge of wines and spirits from different regions of the world; emphasis on preparation, selection, accompaniment with food, basic cost control analysis and service. Must be 21 years or older. \$

**HT-530 Resort Planning and Operation** 3 cr.

Planning and operation of individual destination resorts. Analysis of resort concept, history, master planning, environmental impact, facility design, maintenance and operational management. Prerequisites: take HT-630. \$

**HT-535 Lodging Operations Management** 3 cr.

Investigation of supervisory roles in lodging management, with an emphasis on the importance of financial statements and their interpretation, human resources and productivity, and providing quality hospitality services within all types of lodging facilities.

**HT-540 Development of Tourism Attractions** 3 cr.

Diversified natural and man-made background tourism elements (BTE): preservation and incorporation of concepts for development of tourism destinations.

**HT-544 Hospitality and Tourism Marketing and Sales 3 cr.**

Analysis of marketing strategy, sales techniques, promotional tools, and research for hospitality and tourism development.

**HT-551 Hospitality Convention/Meeting Planning 3 cr.**

The roles and responsibilities of professional hospitality meeting planners and hotel convention sales/service managers are examined for purposes of planning or hosting a major convention, or a corporate, association, or special group meeting event.

**HT-553 Computer Systems for Food Service 3 cr.**

Functions of computers in a variety of food service operations with specific emphasis on spreadsheets and food service application software. Experience using state-of-the-art technology and microcomputers.

**HT-560 Tourism for Persons with Disabilities 2 cr.**

Strategies to accommodate the inclusive and special hospitality and travel preferences of persons with disabilities within the hospitality and tourism industry.

**HT-562 Foodservice Finance and Cost Control 3 cr.**

The use of financial techniques and systems to control food, beverage, and labor costs in hospitality food service operations.

**HT-570 Principles of Property Management 3 cr.**

Property management fundamentals. Topics include ownership goals, management direction, finance and maintenance of multi-family and commercial properties.

**HT-571 Commercial/Residential Property Development and Management 3 cr.**

Exploring factors involved in developing and managing property, both residential and commercial, including undeveloped land. Topics include feasibility studies, financing, appraisal, leases, purchase agreements and management contracts.

**HT-583 Yield Management 3 cr.**

Investigation of the use of computer technology in the lodging industry for revenue planning, scheduling and performance evaluation. Specialized software will be used to analyze and evaluate hotel performance. Prerequisites: take STAT-130.

**HT-618 Casino Tourism 3 cr.**

Research/travel and visits with Chambers of Commerce, casino management personnel, and governing entities to study economic, sociological and cultural impacts of gaming within a particular global or local region. Must be 18 years or older. \$

**HT-623 Wine and Food Pairing 4 cr.**

Matching wine and food from different parts of the world using flavors, textures, and components present in food and wine as complementing strategies. Emphasis on menu planning, food preparation, cooking methods and wine tasting with foods. \$

**HT-624 Catering 3 cr.**

Theory and application of operational and managerial principles for on- or off-premise catering for special events.

**HT-626 Restaurant Operational Management 4 cr.**

Application of the principles of food and beverage management in full service restaurants existing as independent units or as units within a commercial/ noncommercial foodservice operation. The course will emphasize fine dining, fine cuisine and control systems.

**HT-627 Professionalism: Social and Work Environment 1 cr.**

The application of necessary skills to be professional in social and work environments with emphasis on professional dress, proper dining etiquette, business conversation, and job search techniques. \$

**HT-630 Lodging Administration 3 cr.**

Analysis of theories, principles and techniques of lodging management; problems and issues encountered by management in providing quality service within cost-efficient organization. Prerequisites: take HT-583.

**HT-640 Sociocultural Systems of Tourism** 3 cr.

Various psychosocial dimensions of tourism: motivation, development, community and conflict as related to consumer-tourists, tourists and residents.

**HT-642 Trade Show Management** 3 cr.

Investigate and apply the processes and procedures to plan and manage a trade show from a developer and user perspective. Define the processes to select and develop, arrange for site and support services leading to a profitable trade show.

**HT-645 Event Management** 3 cr.

Planning, organizing and the management of events will be investigated for the hospitality, tourism and golf industries. Emphasis is placed on the design, internal management systems and post event evaluation.

**HT-647 International Convention and Meeting Management** 3 cr.

Investigate the process and procedures to plan for meetings in other countries.  
Prerequisites: take HT-551.

**HT-650 Food Service Administration** 3 cr.

Organization and administration of institutional food service systems, personnel selection and training, cost control and problems of supervision.

**HT-651 Integrated Management Systems -- Hospitality** 2-3 cr.

Exploration, comparison and synthesis of practices, concepts and theories in hospitality management systems. Senior Level Or Higher.

**HT-652 Hospitality Professionalism** 2 cr.

Prepare hotel, restaurant and tourism students as professionals in a global community. Role-play emphasis on professional dress, dining etiquette, culture and business conversation, job search and placement techniques.

**HT-654 Security and Risk Management For the Hospitality Industry** 3 cr.

Advanced investigation of security and risk management within hospitality/service industries. \$

**HT-657 Hospitality Management Strategies** 3 cr.

Comparison and synthesis of hospitality management strategies; concepts and theories in relationship to long-term hospitality business goals and objectives. Capstone course for senior-level hospitality and tourism students. Senior Level or Higher. Prerequisites: take HT-562.

**HT-660 Hospitality Industry Law and Liability** 3 cr.

Laws applicable to ownership and operation of inns, hotels, motels, restaurants and other places of public hospitality.

**HT-661 Hospitality Employee Relations** 3 cr.

History and legal strategies and tactics in dealing with hospitality employees in both union and non-union settings.

**HT-662 Hospitality -- Financial Analysis/Budget/Forecasting** 3 cr.

Application of accounting and financial analysis techniques to managerial decision-making in hospitality industry.

**HT-670 Seminar in Property Management** 3 cr.

Capstone course for Property Management. Preparation of a property management plan for a specific property. Discussion of current trends and industry problems. Exploration of development and operating strategies of property management firms.

**HT-681 Special Problems in Hospitality and Tourism** 1-3 cr. R**HT-700 Issues in Hospitality and Tourism** 3 cr.

Significant topics, trends and issues in hospitality and tourism are investigated, developed and presented. Admission to MS in Hospitality and Tourism.

**HT-701 Hospitality and Tourism Research Interpretation 3 cr.**

Interpretation of advanced qualitative and quantitative research findings in the hospitality and tourism industries. Includes examination of data collection techniques and current research trends, including segmentation, group differentiation, product positioning and image formation.

**HT-702 Seminar in Hospitality and Tourism 1 cr.**

Discussion and interpretation of recent research in hospitality and tourism. Choice of problems based upon the needs and interests of the students.

**HT-717 Hospitality and Tourism Colloquium I 1 cr.**

Hospitality and Tourism graduate faculty and guest lecturers will present research concepts, issues and studies related to hospitality, tourism and travel related industries. The focus is on issues relevant to the students and their hospitality and tourism research project.

**HT-718 Hospitality and Tourism Colloquium II 1 cr.**

Hospitality and Tourism graduate faculty and guest lecturers will present research concepts, issues and studies related to hospitality, tourism and travel related industries. The focus is on issues relevant to the students and their hospitality and tourism research project.

**HT-735 Problems in Hospitality and Tourism 3 cr.**

Independent research under direction of research adviser. Selection of problems, development of outline, review of literature, compilation of bibliography, research methodology, conducting research in the hospitality of tourism field. Interpretation of results and a formal presentation is required. Consent of Program Director. Prerequisites: take HT-701. \$

**HT-747 Seminar in Hospitality Management 3 cr.**

Contemporary management theories and techniques to effectively manage a dynamic and diverse hospitality and tourism industry. Topics will address issues that relate to current and future needs. R

**HT-749 Cooperative Education/Internship 1-6 cr.**

Work and study in an approved position to gain business/industry experience. Generally entails recurring, supervised work periods, each one building and expanding on the previous one. R

**HT-751 Strategic Management in Hospitality 3 cr.**

Strategies used by hospitality managers and owners to achieve organizational objectives.

**HT-753 Managing Finance in the Hospitality Industry 3 cr.**

Analytical skills needed to interpret and act upon financial data and information that lead to sound financial decisions for hospitality organizations. Capital budgeting methods, financial statement analysis, break even analysis, short and long-term financing methods, and cost controls.

**HT-754 Managing Technology in Hospitality and Service Industries 3 cr.**

Understanding information technology, systems development methodologies, and strategic information systems planning from a service industry perspective. Thinking tactically, strategically, and creatively in applying information technology solutions to meet the global business environment and drive new hospitality business opportunities.

**HT-755 Leadership and Management in the Hospitality Industry 3 cr.**

Leadership principles, values, and strategies in the hospitality industry. Leadership as a process and a function which can be exercised from anywhere in the organization. Initiating and accommodating individual and organizational change; motivation and conflict management strategies for diverse hospitality/tourism environments.

**HT-756 Hospitality and Tourism Quality Assurance and Customer Service 3 cr.**

Evolution of the service quality movement, assessment, and analysis and synthesis of profitable service business models.

**HT-758 Hospitality Operational Systems 3 cr.**

Capstone opportunity to explore, compare and synthesize the practices, concepts and theories in global hospitality management systems. Evaluating and solving operational problems.

**HT-770 Thesis in Hospitality and Tourism 1-6 cr.**

Independent research under direction of investigation adviser. Selection of problems, development of outline, review of literature, compilation of bibliography, research methodology, conducting of research, interpretation of findings, and

preparation of the final draft according to thesis standards. Student may enroll for variable credits in various semesters with a final total of six. Prerequisites: take EDUC-740 and HT-701. \$

**HT-798 Hotel and Restaurant Field Experience** 1-2 cr.

Off-campus work and study in an approved position to better understand the challenges and potentials of various careers in the hospitality area.

**HT-799 Independent Study** 1-3 cr. R

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## ICT Information Communication Technologies

**ICT-500 Workshop** (1-3 cr.)

Fall, Spring and Summer

Special topics in telecommunication systems, providing hands on or experiential learning activities. Specific content and title to reflect the topic of the workshop. R

**ICT-504 Communications and Information Systems** (1-3 cr.)

Fall, Spring and Summer

Overview of the communications industry. Use of systems to create, process, transmit, receive and evaluate information.

**ICT-505 Information systems for Enterprise** (3 cr.)

Fall, Spring and Summer

Information systems concepts and technology for contemporary enterprise. Includes hardware, software, networks, and enterprise-specific information systems. Emphasis on business-prudent solutions/products based on clearly identified needs/goals. Prerequisites: take ICT-103

**ICT-601 Information Technology Policy and Audit** (3 cr.)

Fall and Spring

Information technology policy, regulatory and audit issues, international standards, and internal security strategies.

**ICT-700 Introduction to Information and Communication Technologies** (1 cr.)

Overview of the Master of Science in Information and Communication Technologies. Research strategies, collaborative software overview and portfolio development.

**ICT-701 Information and Communication Technologies in Organizations** (3 cr.)

Evaluation of information and communication technologies. Impacts and development of information and communication technologies in organizations and society.

Prerequisites: ICT-700 or co-requisite

**ICT-702 Seminar in Information and Communication Technologies** (3 cr.)

Current topics in information and communication technologies. Use of portfolios for assessment. Use of multimedia tools to create a portfolio. Development of competencies to meet the M.S. in Information and Communication Technologies requirements. Create a portfolio framework.

Prerequisite: Take ICT-701

**ICT-780 Information and Communication Portfolio** (1-3 cr.)

Develop and present a portfolio that contains artifacts and research-based reflections that demonstrate the competencies for the M.S. in Information and Communication Technologies. The final product is an electronic portfolio.

Prerequisite: Take ICT-702. R

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# INMGT Industrial Management

## **INMGT-500 Engineering Economy** (2-3 cr.)

Fall, Spring and Summer

Source and application of funds: cost control, valuation, depreciation, replacement theory and taxation.

## **INMGT-501 Seminar** (1-3 cr.)

(Title will reflect specific business or management content.)

Current topics in business and industrial management to meet specific needs of students enrolled. **R**

## **INMGT-502 Seminar** (1 cr.)

Elements of time management, strategies and techniques in industrial and business environments. Analysis of time use by all levels of management.

## **INMGT-510 Production Processing** (3 cr.)

Fall and Spring

Production processes, especially product design as related to economic production; factors that influence choice and sequence of process to obtain end product.

## **INMGT-514 Industrial Enterprise Practicum** (3 cr.)

Fall, Spring and Summer

Organization and operation of an industrial company; election, designing, production planning, production, marketing and distribution of a product.

## **INMGT-520 Quality Tools** (3 cr.)

Fall, Spring and Summer

Practical and statistical quality control in design and use of quality assurance programs: quality engineering, manufacturing quality assurance and product quality assurance.

## **INMGT-525 Quality Management** (3 cr.)

Fall, Spring and Summer

Provides the managerial and technical knowledge necessary to prepare, document, manage, and evaluate quality systems from beginning design through system operation and post-delivery customer services within a product or service environment.

## **INMGT-535 Lean Manufacturing Systems** (4 cr.)

Fall

Introduction to production/operations management and lean manufacturing system design for engineers. Emphasis is given to analysis and design of production systems, facility layout, and globalization.

## **INMGT-550 Facilities Planning** (3 cr.)

Spring

Study of facilities location, structure, and planning for efficient layout and material handling systems.

## **INMGT-565 Project Management** (3 cr.)

Fall, Spring and Summer

Planning, scheduling, and control of technical projects. Topics covered include activity identification, network diagrams, scheduling, PERT/CPM, cost analysis, resource management, and computer control. **\$**

## **INMGT-600 Organizational Leadership** (3 cr.)

Addresses the leader's role in accomplishing organizational objectives through the management and development of followers. Concepts of organizational and individual behavior serve as a foundation for the development of leadership skills such as communication, motivation, leading, team building, building credibility, and conflict management.

## **INMGT-601 Management Consulting** (2 cr.)

Summer

The organization and analysis of major elements of the consulting profession in management: 1) subject matter expertise, 2) marketing, 3) organizational development, 4) business principles for consultants and 5) communication skills; synthesis of the interdependent relationship of the major elements in the consultation process.

## **INMGT-605 Resource Planning and Materials Management Practicum** (3 cr.)

Fall and Spring

Provides students with specific skills in managerial techniques for planning, scheduling and controlling resources in manufacturing and service organizations. Focuses on the first two of the five required APICS exams that lead to certification as a Certified in Production and Inventory Manager (CPIM).

Prerequisites: take INMGT-505.

**INMGT-610 Six Sigma Quality Improvement Methods (3 cr.)**

Fall and Spring

Overview of Six Sigma quality improvement applications. Application of scientific methods to improve quality of products, service, processes, and management systems.

**INMGT-615 Inclusivity in Leadership (3 cr.)**

Winter

An examination of leadership dynamics for, but not limited to, women, people of color and other underrepresented populations including approaches to leading, communicating, and developing inclusive organizations.

**INMGT-616 People Process Culture (3 cr.)**

Fall and Spring

A study of high performing people process culture organizations integrating sociology, applied psychology, and organization behavior subject matter areas.

Prerequisites: take INMGT-600 or PSYC-582.

**INMGT-620 Quality Assurance — Practicum (3 cr.)**

Fall and Spring

Application of principles and techniques learned in INMGT-520, as part of Professional Semester/ Manufacturing Laboratory.

Prerequisites: take INMGT-520, INMGT-525.

**INMGT-622 Quality Engineering (3 cr.)**

Fall and Spring

Practical and statistical engineering methods to improve quality and design in a manufacturing environment.

**INMGT-625 Planned Experimentation for Quality Improvement (3 cr.)**

Fall

Quality improvement through planned experimentation that focuses on product realization activities which consist of new product design and formulation, manufacturing process development and improvement.

**INMGT-630 Employee Involvements: Work Teams (2 cr.)**

Summer

Background and history of employee involvement, teams as a method of employee involvement, analysis of the advantages and disadvantages of different team structures and the planning processes used to implement team structures, analysis of situational variables used to help design the best team approach for an organization, the support systems needed to maintain teams, phases of team development, facilitation skills, and team problem-solving methods.

**INMGT-640 Lean Enterprise (3 cr.)**

Fall and Spring

Principles of lean techniques, justification of lean systems, how lean systems are scheduled, and cost analysis of a lean environment.

**INMGT-660 Industrial Management (2 cr.)**

Summer

Principles and methods of analyzing and solving industrial problems; application through case studies, management games and special problems.

**INMGT-662 Global Manufacturing Study Tour (2-3 cr.)**

Summer

Visit global sites to understand the current state of product design, manufacturing, and distribution in both developed and developing countries. Learn how to develop supplier, manufacturing, and distribution systems in a global setting.

**INMGT-675 Advanced Project Management (3 cr.)**

Fall and Spring

Advanced planning, control, and leadership of technical projects and programs. Topics covered include: project and program justification, project management maturity and methods, multiple project or portfolio management, project management in multinational cultures, virtual project teams, requirements definition, and outsourcing.

Prerequisites: take INMGT-565.



**INMGT-700 Organizational Research Methods (3 cr.)**

Fall, Spring and Summer

Quantitative and qualitative approaches to organizational and industrial research. Application of appropriate research tools to understand interpersonal relationships, analyze and design jobs, organizations and systems. This course should be taken the next to last semester in a student's coursework. Development of a research proposal that may be used to complete master's level field project/thesis.

**INMGT-705 Enterprise Resource Planning (3 cr.)**

Spring

Systems management of enterprise resource planning software used to integrate corporate functional areas. Modules, databases, and system architecture of the software. Assessment, selection, planning, implementing and managing enterprise systems.

**INMGT-710 Seminar in Technology Management (2 cr.)**

Spring

Presentation and discussion of current theory, practice and trends in business strategy, processes, operations, globalization, leadership, professional development, and management of technology. Topics will vary by semester.

**INMGT-720 Foundations in Industrial Operations (2 cr.)**

Fall, Spring and Summer

This course is designed to improve the student's competencies in all aspects of industrial technology. A major professor will be identified who will serve as a tutor in guiding the student's self-development program. There will be a culminating matriculation to candidacy examination to assure minimum proficiency standards.

**INMGT-730 Advanced Technical Problems in Industrial Management (2-6 cr.)**

Advanced study in industrial management, management control, product development or process and facility planning. Recent developments, advanced technical work, experimental work and technical reports. A specific problem area for study in this course must be identified by the student prior to registering for this course.

**INMGT-735 Problems in Technology Management (2-4 cr.)**

Fall, Spring and Summer

Identification, selection and completion of a problem in technology management culminating in a Plan B paper. Admission to MS in Technology Management. \$

**INMGT-740 Decision Modeling (3 cr.)**

Fall

Application of quantitative methodology in industrial decision making. Topics include mathematical modeling, optimization algorithms, linear programming applications, integer programming applications, non-linear programming applications, and simulation.

**INMGT-745 Advanced Manufacturing Simulation (3 cr.)**

Fall

Theory and practice of simulation modeling of manufacturing systems. Theoretical aspects include types of simulation language, data distribution goodness-of-fit, warm-up and run length determination, statistical output analysis, optimization, and variance reduction. Models will be developed, run, animated, and analyzed using a high-level simulation language.

**INMGT-750 Organizational Development (3 cr.)**

Fall and Spring

Change agent skills for middle managers and external consultants to facilitate organizational health. Assessment, diagnosis, intervention, team building, and coaching of key organization personnel. Emphasis on practical methods for the development of various types of organizations.

Prerequisites: take INMGT-600 or INMGT-400.

**INMGT-765 Program Management (3 cr.)**

Fall and Summer

Planning, control and leadership of technical projects and programs. Justification, scheduling, risk management, cost analysis, resource management, program control, information technology, and multiple-project management.

**INMGT-790 Global Technology Management Practicum (1 cr.)**

Self-directed study of globalization and international technology management on the student's work assignments, organization, or profession.

## ITC Instructional Technology Coordinator

### **ITC-710 Introduction to Instructional Technology Coordinator Administration** (1 cr.)

Study of instructional technology coordinator responsibilities regarding the leadership, staffing, planning, financing, and issues surrounding the role within the PK-12 environment.

### **ITC-760 Instructional Technology Coordinator Administration** (3 cr.)

Theoretical and practical skills necessary to perform the role of instructional technology coordinator within the PK-12 setting.

Prerequisites: take ITC-710 and EDUC-726 and MEDIA-710.

### **ITC-790 Instructional Technology Coordinator Practicum** (2 cr.)

Experience in the role of an instructional technology coordinator at a selected public school district under the guidance of a mentor at the school site and a university supervisor.

Prerequisites: take ITC-710 and EDUC-726.

### **ITC-795 Instructional Technology Coordinator Internship** (4 cr.)

Advanced experience in the role of an instructional technology coordinator at a selected public school district under the guidance of a mentor at the school site and a university supervisor.

Prerequisites: take ITC-760 and ITC-790.

### **ITC-797 Field Experience** (1-3 cr.)

Field Experience

## ITM Information Technology Management

### **ITM-508 Convergence Technologies** (3 cr.)

Spring

Creation of single networks that support many different types of traffic: data, audio, video, and interactive multimedia. Planning physical design and installation of a telephone and converged system, requirements of a converged network, and what makes convergence.

### **ITM-530 IP Telephony Design and Implementation** (3 cr.)

Internet Protocol (IP) Telephony components and protocols examination; converged network interpretation; analog and digital voice interface configuration; quality of service configuration; single and multi-site IP telephony deployment; IP telephony features implementation.

### **ITM-540 Cisco Networking Academy Program: Instructor Fast Track** (2 cr.)

Summer

Fast-track option to prepare the instructor for teaching in the Cisco Networking Academic Program, meeting requirements for the Cisco Certified Academic Instructor (CCAI). Instructor's consent required. Must be Cisco CCNA certified.

### **ITM-541 Cisco Networking Academy Program: Instructor I** (4 cr.)

First of four-course sequence preparing instructors for teaching in the Cisco Networking Academy Program, meeting requirements for the Cisco Certified Academic Instructor (CCAI), and preparing for the Cisco Certified Network Associate (CCNA) examination. Instructor's consent required.

### **ITM-542 Cisco Networking Academy Program: Instructor II** (3 cr.)

Second in a four-course sequence preparing instructors for teaching in the Cisco Networking Academy Program, meeting requirements for the Cisco Certified Academic Instructor (CCAI), and preparing for the Cisco Certified Network Associate

(CCNA) examination.  
Prerequisites: take ITM-541.

**ITM-543 Cisco Networking Academy Program: Instructor III (2 cr.)**

Third in a four-course sequence preparing instructors for teaching in the Cisco Networking Academy Program, meeting requirements for the Cisco Certified Academic Instructor (CCAI), and preparing for the Cisco Certified Network Associate (CCNA) examination.  
Prerequisites: take ITM-542.

**ITM-544 Cisco Networking Academy Program: Instructor IV (2 cr.)**

Fourth in a four-course sequence preparing instructors for teaching in the Cisco Networking Academy Program, meeting requirements for the Cisco Certified Academic Instructor (CCAI), and preparing for the Cisco Certified Network Associate (CCNA) examination.  
Prerequisites: take ITM-543.

**ITM-561 Workstation and Server (3 cr.)**

Installing, configuring, and administering Microsoft Windows utilizing the current commercial version of the product for both workstations and servers. Helps prepare students for two of the Microsoft Certified Systems Engineer (MCSE) certification examinations.

**ITM-562 Server Applications (3 cr.)**

Summer  
Installing, configuring, and administering server applications using multiple industry standard operating systems. Server applications may include World Wide Web, FTP, software updates, mail, file sharing, DNS, DHCP, and terminal services.  
Prerequisites: take ITM-561.

**ITM-563 Directory Services (3 cr.)**

Summer  
Provides knowledge and skills to plan, implement, and troubleshoot directory services. Design and implement a secure network. Focuses on a directory services environment, including forest and domain structure, domain name system, site topology and replication, organizational unit structure, and delegation of administrations.  
Prerequisites: take ITM-561.

**ITM-582 Network Systems Design (3 cr.)**

Spring  
Concepts from communication networks. LAN, MAN, WAN networks. Introduction to LAN switching, ATM and virtual LANS. Designing and integration of LAN switching virtual networking and ATM into today's networks.

**ITM-583 Introduction To Network Security (3 cr.)**

Winter, Summer  
Design, implementation and management of network security in multilayered computer networks. Identifying and evaluating network security threats; internet, intranet, and extranet security issues.

**ITM-591 Wireless Systems (3 cr.)**

Spring  
Wireless networking combining Radio Frequency (RF) and Local Area Networking (LAN) technology fundamentals. Basic concepts and building blocks or the convergence between RF and networking technologies. Technologies and tasks vital to installing, managing, and supporting wireless networks.

**ITM-641 Scalable Internetworks (3 cr.)**

One of three core courses for preparation for the Cisco CCNP and CCDP professional certification. Students will learn how to build scalable routable networks. Students are required to pass the associated Cisco certification examination.

**ITM-642 Remote Access Networks (3 cr.)**

Fall and Spring  
One of three core courses for preparation for the Cisco CCNP and CCDP professional certification. Build remote access networks to interconnect central sites to branch offices and home offices. Students are required to pass the associated Cisco certification examination.  
Prerequisites: take ITM-641.

**ITM-643 Multi-Layer Switched Networks (3 cr.)**

Fall and Spring  
One of three core courses for preparation for the Cisco CCNP and CCDP professional certification. Build multi-layer switched networks. Students are required to pass the associated Cisco certification examination.  
Prerequisites: take ITM-641.

**ITM-644 Internetwork Troubleshooting (3 cr.)**

Fall and Spring

Specialization course for the Cisco CCNP professional certification. Students will learn to troubleshoot internetworks. Students are required to pass the associated Cisco certification examination.

Prerequisites: take ITM-641 and ITM-643.

**ITM-645 Internetwork Design (3 cr.)**

Fall and Spring

Specialization course for the Cisco CCNP professional certification. Students will learn to design internetwork solutions. Students are required to pass the associated Cisco certification examination.

Prerequisites: take ITM-641, ITM-642, and ITM-643.

**ITM-650 Enterprise Solutions and Unified Communications (3 cr.)**

Enterprise-level network utilizing the technologies and methods that are current industry best practices. Provide enterprise network solutions and unified communications to an organization while maintaining quality of service. New and emerging network technologies for an enterprise network.

Prerequisites: take ITM-530, ITM-563, and ITM-644.

**ITM-681 Telecommunications Systems Administration (3 cr.)**

Fall

Issues and concerns required to manage telecommunications networks and contemporary problems.

**ITM-684 Advanced Network Security and Auditing (3 cr.)**

Network infrastructure, operating systems, data centers, and virtualized environment security and auditing. Information technology government and industry regulation compliance.

Prerequisites: ITM-383, ITM-363, ITM-443

**ITM-690 Information Technology Management Capstone (3 cr.)**

Fall and Spring

Work with an outside organization in a team environment utilizing concepts of design, brainstorming, problem solving, team work, creativity, evaluation, and present findings in oral and written formats. Prerequisite: take ITM-650

**ITM-715 Computer Networking Foundations (4 cr.)**

Fall, Spring and Summer

Network infrastructure management and integration. LAN/WAN routing, switching, security and maintenance.

**ITM-798 Problems in Graphic/Telecommunications (2-6 cr.)**

Fall, Spring and Summer

Substantive study and activity for specialists in the graphic/telecommunications fields to include library work, field observation, laboratory work planned by the student and approved and supervised by a faculty consultant in graphic/telecommunications. Preparation of a technical report may be repeated for a maximum of six semester credits.

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## LIT Literature

**LIT-502 Topics in Literature (1 cr.)**

Fall, Spring and Summer

Intensive analysis of selected authors and literary works with emphasis on discourse analysis in group and workshop settings. **R**

**LIT-503 Coming of Age in Literature and Film (3 cr.)**

Fall, Spring and Summer

Exploration of literary and filmic works that treat age, coming of age, aging, and old age, including texts from American majority and minority cultures. Literary and critical analysis using age studies in literature.

## MBE Marketing & Business Education

### **MBE-500 Introduction to Teaching Marketing and Business Education** (3 cr.)

A study of becoming a teacher in the disciplines of Marketing and Business Education with a deep focus on their related career and technical student organizations.

### **MBE-501 Methods and Strategies for Teaching Marketing** (4 cr.)

Fall

Marketing content structures, teaching and learning strategies and aids.

### **MBE-555 Marketing and Business Seminar** (3 cr.)

Issues and trends in marketing, business and career and technical education. Experiences necessary for success during student teaching and upon initial career entry. **R**

### **MBE-601 Marketing Education Curriculum** (2-3 cr.)

Fall

Program, course and lesson-level curriculum development skills. Assessment systems, strategies, design elements, and test development skills.

### **MBE-611 Business Education Methods and Curriculum** (5 cr.)

Teaching methods and curriculum design for business educators. Emphasis on basic business subjects; business literacy and entry-level job preparation; issues and trends; demonstration and development of a standards-based business education curriculum.

### **MBE-612 Elementary Keyboarding Teaching Methods** (1 cr.)

Developmentally appropriate methods of instruction in keyboarding and emerging input technologies applicable to elementary educational settings. Must be an Elementary Certified Educator.

### **MBE-701 Issues in Marketing and Business Education** (2 cr.)

Definition, exploration and research of a current issue in secondary or postsecondary Marketing and Business Education.

### **MBE-702 Improving Methods and Materials for Marketing and Business Education** (2 cr.)

Instructional materials and methods for utilization in secondary or postsecondary Marketing and Business Education.

### **MBE-799 Independent Study** (1-3 cr.) **R**

## MECH Engineering Mechanics

### **MECH-532 Mechanical Design** (4 cr.)

Analysis and design of machine elements: gearing bearings, shafting and friction devices.

### **MECH-537 Mechanical Design Drafting** (2 cr.)

Design of a machine, specifications, layout, calculations, bills of material, detail and assembly drawings.

### **MECH-592 Mechanics of Machinery I (3 cr.)**

Dynamics of machinery: rectilinear and curvilinear motion; translation and rotation of a rigid body, force-acceleration equation, impulse and momentum; work, power and energy; balancing and vibration.

### **MECH-593 Mechanics of Machinery II (3 cr.)**

Graphical analysis and synthesis of linkages, cams, gear trains, displacement, velocity, acceleration and dynamic forces.

### **MECH-729 Product Development and Design (3 cr.)**

Theory and application of the product development and design process. Principles of efficient engineering processes and management structures that support product design. Emphasis on structured approaches that insure constraints are properly defined and met. Includes major project.

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## **MEDIA Media Technology**

### **MEDIA-540 History of Photography (3 cr.)**

Spring

A survey of the scientific and aesthetic development of photography from its beginnings to the recent practices of photographic technologies in the context of post-modernity. This course will examine the diversity of styles, techniques, methods, and ideologies of selected photographers focusing on their contributions and influences in advertising, art, fashion, communication technology and pop culture.

### **MEDIA-560 Introduction To Media in Education and Training (2 cr.)**

Fall, Spring and Summer

Use of media in education and training. Includes the production of media and instructional materials in print, video, computer-bases and multimedia formats.

### **MEDIA-565 Integrated Software Applications For Instruction (3 cr.)**

Spring and Summer

Software applications for the professional and personal use of instructors. The effective use of word processing, spreadsheet, database, presentation, communication and other appropriate software applications with emphasis on curricular integration and professional standards. \$

### **MEDIA-566 Integrated Media Applications For Instruction (3 cr.)**

Prepares instructors to use various media in the learning environment. Emphasis on proper curriculum integration based on sound curriculum design principles and professional standards. Instructor's consent required.

Prerequisites: take MEDIA-565.

### **MEDIA-570 Computer-Assisted Interactive Video (3 cr.)**

Summer

Design, production and evaluation of interactive video applications. Analysis of various hardware and software systems. Instructor's consent required.

### **MEDIA-575 Web Production and Distribution (3 cr.)**

Fall, Spring and Summer

Production and distribution of content to the World Wide Web (WWW). Consideration given to importance, types and purposes, advantages and disadvantages, production and distribution

workflow, planning, use of various media elements and technologies for web production and distribution.

**MEDIA-600 Workshop** (1-3 cr.)

Fall, Spring and Summer

Special topics in media technology providing hands-on or experiential learning activities. Specific content and title to reflect the topic of the workshop. **R**

**MEDIA-640 Telecommunication Systems and Teleconferencing** (2 cr.)

Fall, Spring and Summer

Interactive teleconferencing techniques. Applications, effective utilization and cost-effectiveness of information distribution systems, including telephone, television, teletext, videotext, viewdata, cable TV, slow-scan TV, and computers. Survey of transmission systems, including telephone lines, satellites, coaxial cable, microwave and fiber optics.

**MEDIA-710 Learning Technologies** (3 cr.)

Overview and selection criteria of instructor-led, computer-based, and distance learning systems for delivering content to trainees in the workplace. Includes the development of training materials in a variety of formats. Instructor's consent required. Computer literacy required.

Prerequisites: take MEDIA-560.

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## **MFGE Manufacturing Engineering**

**MFGE-551 Manufacturing Process Engineering I** 3 cr.

Understanding, analysis, and control of machining and metal forming processes. Emphasis is given to process characteristics of heat transfer, process forces and pressures, and machine tool dynamics. Sheet metal designs utilizing solid modeling software. Instructor's consent required.

**MFGE-552 Manufacturing Process Engineering II** 3 cr.

Analysis of polymer and metal behavior in processing; mechanics of processing; identification of appropriate fabrication processes; diagnosis of process related problems; mathematical modeling of process designs.

**MFGE-615 Machine Vision and Robotics** 2 cr.

Design of machine vision and industrial robotic applications, including cost justification.

**MFGE-640 Manufacturing System Design and Simulation** 3 cr.

Design of manufacturing systems using contemporary methods and philosophies. Modeling and comparison of system designs using simulation software. Interpretation of experimental simulation results to evaluate system design alternatives. Preparation of technical reports summarizing projects. Instructor consent required.

**MFGE-665 Reliability Engineering** 3 cr.

A practical introduction to reliability engineering with the opportunity for application. Topics covered include reliability need, calculations, predictions and modeling, and test design. Statistical proficiency required.

**MFGE-690 Manufacturing System Design Problems** 1-3 cr.

Manufacturing system design through the application of previously learned principles and techniques. Issues to be addressed include: product design for manufacturability, process and tooling design and fabrication, system layout and equipment configuration, information and control architecture, implementation of quick-changeover strategies, task sequencing and scheduling, and simulation and evaluation of alternatives.

**MFGE-707 Field Project Formulation** (1 cr.)

Critical reviews of manufacturing engineering field problems and analyses. Discuss, identify, and write a detailed, statistical, and realistic data collection method in preparation for the field problem.

Prerequisite: take INMGT-625

**MFGE-735 Field Problem in Manufacturing Engineering** 3 cr.

Identification, selection and completion of a problem in manufacturing engineering culminating in a Plan B paper. Application of advanced manufacturing engineering topics. Admission into the M.S. in Manufacturing Engineering program and approval of research advisor required.

**MFGE-753 Polymer Engineering** 3 cr.

Advanced analysis of polymer behavior in processing; prediction of mechanical behavior; analysis of polymer failure; analysis of polymer electrical and optical properties. Prerequisite: take MFGE-552 or consent of instructor.

**MFGE-771 Emerging Manufacturing Materials** 3 cr.

Theory and application of new and emerging materials in manufacturing. Principles of materials design and development. Properties and behavior of new and emerging materials and their enabling role in industry. Recommended: undergraduate coursework in chemistry and engineering materials.

**MFGE-792 Special Projects in Manufacturing Engineering** 2-6 cr.

Substantive study and activity for specialists in the industry and technology field to include library work, field observation, laboratory work planned by the student and approved and supervised by a faculty consultant. Preparation of a technical report. May be repeated for a maximum of six semester credits.

Prerequisites: TECED-739.

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## MFGT Manufacturing Technology

**MFGT-503 Computer Aided Manufacturing** (3 cr.)

Justification for and application of computer assistance in manufacturing process; machine process control, inventory and materials handling, robotics and automated assembly, product design and part grouping in relation to total manufacturing operation.

**MFGT-515 Metallurgy** (3 cr.)

Properties of crystalline solids, production of iron and steel, the carbon-iron equilibrium diagram, principles of heat treatment, properties of ferrous alloys. Production, properties, and theory of the most important non-ferrous metals and alloys.

**MFGT-530 Plastics For Teachers** (2 cr.)

Overview of plastics as a manufacturing material. Focus on plastics processes: injection molding, blow molding, extrusion, thermoforming, and reinforced resin composites. Includes lab projects for the technology education classroom and tours to plastic processing industries.

**MFGT-545 Design and Simulation of Manufacturing Systems** (3 cr.)

Design of manufacturing systems using contemporary methods and philosophies. Modeling and comparison of system designs using simulation software. Interpretation of experimental simulation results to evaluate system design alternatives. Preparation of technical reports summarizing projects. Statistical knowledge recommended.

**MFGT-600 Workshop** (1-3 cr.)

Special topics manufacturing, providing hands-on or experiential learning activities. Specific content and title to reflect the topic of the workshop. **R**

**MFGT-605 Industrial Robotics** (3 cr.)

Specifications, planning, purchasing decisions, and programming of industrial robots. Instructor's consent required.

**MFGT-792 Special Projects in Manufacturing Technology** (2-6 cr.)

Substantive study and activity for specialists in the industry and technology field to include library work, field observation, laboratory work planned by the student and approved and supervised by a faculty consultant. Preparation of a technical report. May be repeated for a maximum of six semester credits.

Prerequisites: take TECED-739



## MFT Marriage and Family Therapy

### **MFT-666 Alcoholism and Family Systems Intervention** (2 cr.)

The role of alcoholism in the family and how to intervene therapeutically.

### **MFT-735 Investigations**(2 cr.)

A research experience which culminates in a Plan B paper. Consent of Program Director. Prerequisites: take EDUC-740 or MFT-765. \$

### **MFT-740 Cultural Competence in Family Therapy** (3 cr.)

Spring

Cultural competence and its application in MFT. Exploration of systems of privilege and oppression and their link to interpersonal dynamics. Self-examination of cultural assumptions. Practice in working with difference.

Prerequisite: take ANTH-620

### **MFT-744 Psychometric Aids in Couples and Family Therapy** (2 cr)

Spring

Understanding and applying psychometric instruments in MFT context. Includes descriptive statistics, reliability, measurement error, validity, interpretation, selection, administration, cultural diversity, disabilities.

### **MFT-745 Treating Drug Abuse, Intimate Violence and Self Harm** (3 cr)

Fall

Assess and treat intimate violence (emotional, physical, sexual, neglect), substance abuse and self harm. Children, adolescents, adults, couples and families.

### **MFT-750 Foundations of Couples and Family Therapy** (3 cr.)

Study of early theories of marriage and family therapy. Assessment and treatment for children, adolescents, adults, couples, parents and families.

### **MFT-751 Contemporary Couples and Family Therapy** (3 cr.)

Study of contemporary theories of marriage and family therapy. Assessment and treatment for children, adolescents, adults, couples, parents and families.

### **MFT-752 Couples Therapy and Sex Therapy** (3 cr)

Therapeutic models, assessment and interventions for working with couples. Dynamics of couple relationships including communication, infidelity, emotional regulation, conflict management, and sexual interaction.

### **MFT-755 Professional Issues in Couples and Family Therapy** (3 cr.)

Spring

Exploration of the issues in the development of professional skills, attitudes and identity in the area of marriage and family therapy. Prerequisites: take MFT-750.

### **MFT-760 Sex Therapy Seminar** (2 cr.)

This course is offered to graduate students, who have already taken a basic course in human sexuality and who plan to work in the helping professions. Its main goal is to provide participants with the basic skills, knowledge and attitudes that will enable them to help clients solve problems related to sexuality. Instructor's consent required.

### **MFT-765 Research in Psychotherapy** (3 cr.)

Fall and Spring

Basic research methods in the evaluation of therapy effectiveness. Application of research skills by demonstrating ability to critique published studies and to develop a research proposal.

### **MFT-793 Couples and Family Therapy Practicum I** (4 cr.)

Fall

Preparation for professional couple and family therapy services through seminar discussions, observation, and supervised therapy experience. Admission to MS in Marriage and Family Therapy program and MFT program director consent required.

**MFT-794 Couples and Family Therapy Practicum II (4 cr.)**

Spring

Sequel to MFT-793. Continuing preparation for professional couple and family therapy services through seminar discussions, observation, and supervised therapy. MFT program director consent.

Prerequisites: take MFT-793.

**MFT-795 Couples and Family Therapy Practicum (3 cr.)**

Summer

Preparation for professional couple and family therapy services through seminar discussions, observation, and supervised therapy. MFT Program Director consent.

**MFT-799 Independent Study (1-3 cr.) R**

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## MSCS Mathematics, Statistics and Computer Science

**MSCS-590 Topics 1-3 cr.**

Topics of current importance in applications of mathematics to problems in business, industry, government or society. May be repeated for additional credit with consent of program director. **R**

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## PHOTO Photography

**PHOTO-505 Photo Processes (3cr.)**

Fall, Spring, and Summer

Advanced monochromatic photography: aesthetics, advanced theory, view-camera techniques, studio lighting, materials and equipment selection, sheet-film processing, specialized processes and techniques. \$

**PHOTO-511 Advertising and Public Relations Photography (3cr.)**

Fall, Spring, and Summer

A survey of advertising and public relations photography trends and practices. The relationship between photography, typography and design, image capture, manipulation, file management, workflow, output, as well as identifying and meeting client needs and expectations are stressed. A digital SLR camera is required.

**PHOTO-530 Video Production (3cr.)**

Fall and Summer

A survey of digital audio and video production fundamentals with emphasis on workflow, digital capture, editing and manipulation and delivery alternatives.

**PHOTO-535 Film-History and Appreciation (3cr.)**

Fall

Evolution of motion picture film as medium of mass communication and aesthetic expression; contributions of noted film producers.

### **PHOTO-611 Photojournalism and Documentary Photography (3cr.)**

Fall

A survey of photojournalism and documentary trends and practices for editorial publication. The importance of the still photography as a conveyor of information and influence on public opinion is emphasized. Ethical and moral considerations, freedom of press and the public's right to know are stressed. A digital SLR camera is required.

### **PHOTO-612 Nature Photography (3cr.)**

Fall, Spring, and Summer

Fundamentals of conventional and digital photography, camera techniques, composition, aesthetics, exposure, and light in relation to animals, plants, water, weather and landscapes. Emphasis on appropriate photographic equipment and field techniques for nature photography. Student must provide an adjustable camera. \$

### **PHOTO-630 Video/Cinema Practicum (3cr.)**

Spring

Cross discipline teams explore selected topic(s) through the completion of professional level video/cinema project(s), from concept to distribution digital media.

Prerequisites: take PHOTO-530.

### **PHOTO-641 Fashion and Glamour Photography (3cr.)**

Spring

A survey of fashion and glamour photography trends and practices for advertising and editorial publication. Emphasis is placed on studio and location lighting, working with models, hair and make-up artists as well as wardrobe and prop stylists. The importance of concept and design in creating effective images is stressed.

### **PHOTO-651 Product Photography (3cr.)**

Fall, Spring, and Summer

Photography of natural and manufactured products for illustration, documentation, catalog and aesthetic purposes. Studio and field shooting, lighting for various product characteristics and locations, markets and market requirements, photographer-client relations, legal issues. 35mm single lens reflex, medium format, view or adjustable digital (3megapixel minimum) camera required.

### **PHOTO-695 Professional Portfolio Development (3cr.)**

Spring

Capstone experience for the Applied Photography minor. Students fine tune their direction and concentrate on the area they intend to specialize in their professional career. Students design and produce a portfolio to be evaluated by representative professionals. Standards of professional practice are emphasized.

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## **PHYS    Physics**

### **PHYS-530 Science and the Fallible Mind For Educators    (2 cr.)**

Cross-disciplinary, physical science course primarily intended for educators. Defines and examines science with a perspective on societal issues related to the human mind, consumer

marketing, psychology, religion, risk and fear, global concerns, and the use and abuse of numbers. H.S. Algebra.

**PHYS-596 Topics in Astronomy for Elementary Teachers (2 cr.)**

Build confidence and curriculum for in-service teachers when teaching select topics in astronomy and geology at the elementary level.

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## PKG Packaging

**PKG-535 Packaging Machinery (3 cr.)**

Weighing, forming, filling, sealing, cartoning, capping, labeling, wrapping, casing, uncasing, palletizing/depalletizing machines as applies to the functional capabilities of speed, materials, containers, and operating functions.

**PKG-690 Packaging Development (3 cr.)**

Applications of packaging functions: developing a product's complete packaging system, from final production of product to consumer.

**PKG-695 Packaging Seminar (2 cr.)**

Current packaging problems or developments (subject based on students' interests and current issues).

**PKG-740 Food Packaging Laboratory (3 cr.)**

Solve complex and interrelated problems in food packaging research/development through understanding of the interrelationship of food and packaging and laboratory testing methods.

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## POWER Power

**POWER-595 Seminar 1-2 cr.**

Specific content is designed to upgrade competencies of participants. Content will change to reflect current state of the art in electricity/electronics or power mechanics. R

**POWER-792 Special Projects in Power 2-6 cr.**

Substantive study and activity for specialists in the power field to include library work, field observation, laboratory work planned by the student and approved and supervised by a faculty

consultant in power technology. Preparation of a technical report. May be repeated for a maximum of six semester credits.

## PSYC Psychology

### **PSYC-520 Psychology: Its History and Systems** (3 cr.)

Fall, Spring and Summer

History of psychology and influence of early competing schools of thought: structuralism, functionalism, behaviorism, Gestalt psychology, and psychodynamic psychology. Evolution to present as a diverse behavioral science with emphasis on neobehaviorism, humanistic psychology, and cognitive psychology.

### **PSYC-530 Psychology of Learning** (3 cr.)

Fall

A course designed to acquaint the student with the principles of learning drawn from experimental and theoretical psychology. These principles are demonstrated as they apply to animal and human learning. Modern viewpoints toward theories of learning are emphasized.

### **PSYC-535 Motivation and Emotion** (3 cr.)

Fall, Spring and Summer

An experimentally oriented introduction to the fundamental principles of motivation and emotion.

### **PSYC-540 Psychology of Individual and Group Differences** (3 cr.)

Fall

Nature and extent of differences if individuals and groups are studied. Intelligence, achievement, aptitudes, interests, attitudes, and general personality are the major differences included. Race, sex, nationality, social class and age in relation to individual differences are studied.

### **PSYC-551 Children's Social Reasoning** (3 cr.)

Fall and Spring

Focused, in-depth study of social reasoning from birth through late childhood. Empathy, friendship, altruism, multicultural perceptions, shyness, assertiveness, aggression, loneliness, morality, values, and global responsibility. Heredity/environment-based theories. Assessment tools and prevention and intervention programs. Prerequisites: PSY-110 (for PSY-351).

### **PSYC-552 Adolescent Psychology** (3 cr.)

Fall, Spring and Summer

The physical, emotional, social, moral, and intellectual development of secondary school youth.

### **PSYC-561 Abnormal Psychology** (3 cr.)

Fall, Spring and Summer

A study of more serious mental disturbances. Emphasis on the growing importance of mental disorders and on their early detection and referral is studied.

### **PSYC-570 Interpersonal Effectiveness Training** (3 cr.)

Fall, Spring and Summer

Training in effective interpersonal communication attitudes and skills for creating healthy relationships including: self-awareness/self-expression; understanding others' communication; assertive rights/responsibilities coping with difficult emotions; conflict management/resolution and mediation; collaborative problem solving and teamwork; gender differences in communication style; effectiveness in relationships with culturally diverse individuals; and effectiveness in online relationships.

### **PSYC-571 Introduction To Health Psychology** (3 cr.)

Fall

Principles of psychology applied to the promotion of health and wellness; prevention of disease, injury and premature death; psychological treatment of illness; improvement of health care; and formation of health policies.

**PSYC-575 The Psychology of Marriage and the Family (2 cr.)**

Fall

A study of the interpersonal relations involved in dating, mating and family collaboration with growing awareness of patterns for self- integration.

**PSYC-577 Consumer Psychology (3 cr.)**

Fall

Psychological principles and theories from the areas of motivation, perception, learning, attitude, information processing, personality, groups, organizational psychology, and environmental psychology are applied to the understanding of consumer behavior, consumer problems, and their solution.

**PSYC-579 Public Relations (2 cr.)**

Fall, Spring and Summer

Introduction to public relations in industry and education including community relations, employee relations, customer relations, media relations, tools of public relations, two-way communications, and special publics.

**PSYC-582 Human Resource Management (3 cr.)**

Fall, Spring and Summer

Organization and coordination of personnel practices and methods. Consideration given to communication, employment, orientation and training, working conditions, supervision, performance evaluation, collective bargaining, salary administration, health and recreation.

**PSYC-591 Applied Psychophysiological Methods (3 cr.)**

Fall

Theory, methods, laboratory procedures, and applications of physiological responses to psychological stimuli.

**PSYC-601 Workshop: Special Topics in Psychology (1-3 cr.)**

Current specialized topics studied in a small group setting utilizing experimental activities. **R**

**PSYC-603 Management of Employee Reward Systems (3 cr.)**

Fall, Spring and Summer

Review of issues in the reward and compensation of employees and of systematic methods for the determination of employee wages, incentives and benefits. Psychological theories of motivation, external equity, job analysis, identifying compensable factors used in job evaluation, comparable worth and performance appraisal, individual salary determination.

**PSYC-632 Perception (3 cr.)**

Fall

This course serves as an introduction to human perception. The content of the course is structured around an information processing model, with the sensory and memory facilities considered as information systems. The student will analyze perceptual research, become familiar with classical and modern psychophysical techniques and conduct experimentation in human information processing.

**PSYC-642 Cognitive Processes (3 cr.)**

Spring

Cognitive theories of attention, memory, language, reasoning and problem solving with applications to fields of education, vocational rehabilitation, gerontology, forensic, clinical and counseling psychology.

**PSYC-655 Myers-Briggs Type Indicator (3 cr.)**

Principles of Carl Jung's theory of psychological type are explored with the Myers-Briggs Type Indicator (MBTI). Applications in personal, interpersonal and organizational development; teaching/training and learning styles; collaborative problem solving; conflict; stress and time management.

**PSYC-675 Right Brain (2 cr.)**

Spring and Summer

The two hemispheres of the human brain. Exploration and experience in right hemisphere modes of consciousness, through techniques such as meditation, hypnosis, drawing, guided imagery and dreaming.

**PSYC-685 Recruitment and Selection of Human Resources (3 cr.)**

Fall, Spring and Summer

In-depth examination of the processes involved in the design and implementation of procedures for selecting employees;

the impact these procedures have on the organization; and recruitment, job analysis, testing methods, legal issues, selection strategies, career development.

**PSYC-693 Field Practicum in Public Relations Specialization (1-3 cr.)**

Fall, Spring and Summer

Opportunity to apply public relations principles in a practical setting. All coursework for the public relations specialization must be completed prior to the practicum that serves as a capstone for the specialization. Both setting and job description must be approved by the faculty supervisor. **R**

**PSYC-701 Seminar On Diversity in the Workplace (1 cr.)**

Spring

Application of problem solving skills and strategies to issues regarding diversity in the context of applied psychology.

**PSYC-702 Ethics in Applied Psychology (1 cr.)**

Fall

Ethical principles and codes of conduct for psychologists, with application to worksettings encountered by applied psychologists. Consideration to ethical codes of conduct in various professions, and the role of culture, personality and social factors, and major life events in conceptualizing ethical standards.

**PSYC-707 Applied Social Psychology (3 cr.)**

Fall

Principles and methods derived from social psychology applied to problems and issues in a variety of settings.

**PSYC-708 Psychosocial Intervention (3 cr.)**

Spring

Theories and methods of planned change. Training of effective change agents.

**PSYC-710 Applied Psychology Seminar (1 cr.)**

Field of Applied Psychology and the Master of Science in Applied Psychology (MSAP) program. Critical thinking and professional writing skill development. Thesis process, professional ethics, diversity issues in Applied Psychology, and professional development extracurricular activities.

**PSYC-711 Applied Psychology Seminar II (1 cr.)**

Spring

Preparation for Thesis/Field Problem. Applying critical thinking and professional literature review skills to the thesis/field problem. Internship readiness. Professional writing skills. Ethics and diversity in Applied Psychology. Extracurricular professional development.

Prerequisite: PSYC-710

**PSYC-712 Applied Psychology Seminar III (1 cr.)**

Fall

Faculty and peer support for pragmatic issues related to independent research project completion and internship obtainment. Job-seeking skills. Professional development through self-assessment and documentation of MSAP related learning. Ethical and diversity related issues in Applied Psychology.

Prerequisite: PSYC-711

**PSYC-735 Applied Psychology Field Problem(2-6 cr.)**

The investigation of a problem designed to include the planning, implementation and the evaluation of a feasible solution in an applied setting. Advanced standing in the MS in Applied Psychology program. Enroll for 2, 4, or 6 credits across terms for a required total of 6 credits. **R\$**

**PSYC-750 Foundations of Evaluation Research (3 cr.)**

Fall

Examination of evaluation processes with an emphasis on foundational knowledge, skill, and attitude development. Description of professional behaviors necessary for success in evaluation research. Skill development in planning and managing evaluations, devising appropriate data collection strategies, and pilot-testing evaluation instruments and procedures. Corequisite: Take PSYC-790 concurrently

**PSYC-751 Applications of Evaluation Research (3 cr.)**

Examination of evaluation processes with an emphasis on applying evaluation knowledge, skills, and attitudes. Emphasis on application of professional behavior principles and competency-based evaluation planning and design. Skill development of data collection, analysis, and interpretation on a supervised field evaluation project. Prerequisites: take PSYC-750 and PSYC-790

**PSYC-752 Practicum in Program Evaluation (3 cr.)**

Fall

Advanced independent applied psychology field project. Project management and external consulting skill development. Exemplary professional behavior and independently planning, designing, implementing, and managing applied psychology projects with supportive but minimal client, instructor and peer supervision  
Prerequisites: successful completion of annual review.

**PSYC-760 Evaluation Studies - Planning and Designing the Evaluation (4 cr.)**

Overview of evaluation types and processes. Evaluation planning and design strategies. Needs assessment. Identification of evaluation questions, models, and methods. Development of budget, management, data collection, data analysis, data storage, and communication/reporting plans. Preparation and negotiation of evaluation proposals. Identification and development of reliable and valid instrumentation.

**PSYC-761 Evaluation Studies - Implementing the Evaluation Plan (4 cr.)**

Overview of evaluation implementation processes and issues. Collection, analysis, and interpretation of data. Conduct of effective interviews, focus groups, surveys, observations, and cost analyses. Communication of evaluation results to diverse stakeholders.

**PSYC-762 Evaluation Studies- Managing the Evaluation (1 cr.)**

Overview of evaluation management processes and issues. Identification and resolution of problems, techniques to address changes in plan, budget, and schedule. Methods of debriefing stakeholders and monitoring post-evaluation changes.

**PSYC-765 Psychology of the Adult Learner (2 cr.)**

Application of contemporary perspectives in adult psychology to adult learners, primarily in employment settings. Specific strategies for trainers of adult learners, with consideration of gender, cultural, and racial factors. Group and individual differences, organizational dynamics, motivational factors, and disabilities are addressed.

**PSYC-770 Thesis - Applied Psychology (2-6 cr.)**

Independent research under direction of thesis advisor and committee. Selection of research questions/problems, review of literature, methodology development, conduct of research, interpretation of findings, and preparation of final paper according to thesis standards. Prerequisites: take PSYC-791 R (6 Maximum Credits)

**PSYC-771 Psychological Foundations of Health Promotion (3 cr.)**

Fall

Theoretical issues related to Health Promotion. Psychosocial determinants of health and disease. Theories of health behavior. Intervention theory and development. Health care administration and policy. Ethical and diversity considerations. Ecological systems perspective for conceptualizing health promotion.

**PSYC-772 Psychological Applications of Health Promotion (3 cr.)**

Applies knowledge and skills from PSYC-771 *Psychological Foundations of Health Promotion*. Focus on Health Promotion intervention and research/evaluation. Experiential training in applying psychological principles to health promotion. Implications of health promotion on health care policy and psychological principles to health promotion. Implications of health promotion on health care policy and administration. Introduces behavioral epidemiology and health services research.

**PSYC-781 Advanced Industrial Psychology (3 cr.)**

Fall

Topics of research and applications in industrial/organizational psychology ranging from issues of personnel selection and assessment to more macro issues of organizational design and behavior. Applications of social and differential psychology in industry consistent with recent behavioral science research and applications. Instructor's consent required.

**PSYC-790 Research Design & Analysis I (3 cr.)**

Fall

Intermediate Research design with emphasis on descriptive and univariate analyses to solve applied problems in psychology. Selection of appropriate designs and data analysis methods. Includes statistical software applications, hypothesis testing, and interpretation. Prerequisites: Graduate standing or instructor's consent required.

**PSYC-792 Research Design & Analysis II (3 cr.)**

Research design with emphasis on qualitative and mixed methods designs and correlational and multivariate analyses to solve applied problems in psychology. Selection of appropriate designs and data analysis methods. Includes statistical software applications, hypothesis testing, and interpretation. Prerequisites: take PSYC-790

**PSYC-793 Psychometrics of Test Construction (3 cr.)**

Assumptions, models and applications of psychometric measurement in business and evaluation settings. Test construction, item design and construction, item analysis, measure reliability and validity. Prediction and measurement of



attitudes and opinions. projects.  
Prerequisite: Graduate standing or instructor approval.

**PSYC-875 Psychoeducational Intervention Practicum (3 cr.)**

Fall

Psychoeducational intervention strategies for promoting healthy individuals, families, organizations and communities. Designing, implementing, and evaluating psychoeducational learning experiences.

Prerequisites: take PSYC-708, PSYC-771, PSYC-871.

**PSYC-890 Applied Psychology Internship (1-5 cr.)**

Supervised field experience in an applied psychology role involving the practice and integration of professional skills and knowledge developed in other courses. (Repeatable up to 5 credits.) Consent of program director. Advanced standing in the MS in Applied Psychology program. **R**

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## **RC Risk Control**

**RC-501 Seminar (1-2 cr.)**

Structured analysis of regulatory and curricular issues with which traffic safety educators should be conversant. **R**

**RC-571 Alcohol, Drugs and Accident Prevention (3 cr.)**

Impact of alcohol and drug use on accident prevention programs; current efforts to rehabilitate alcohol and drug abusers.

**RC-572 Behavior Approach to Accident Prevention (3 cr.)**

Behavioral aspects of accident prevention from physiological, psychological, sociological and cultural perspectives; identifying, understanding and modifying attitudes and behavior.

**RC-581 Principles of Occupational Risk Control/Safety (2-3 cr.)**

Fall, Spring and Summer

An introduction to risk control/safety approaches which are intended to protect employee, property, legal, environmental, and financial-based assets through the development of internal practices/standards which promote the systematic anticipation, identification, analysis and control of risks that are inherent to the operation..

**RC-583 Occupational Safety Health and Environmental Standards (3 cr.)**

Fall and Spring

Understanding and proper application of a range of regulations and standards relating to occupational and environmental safety and health.

**RC-586 Fire Protection (2 cr.)**

Spring

Behavior of fire: chemistry, protection, prevention and control.

**RC-587 Human Factors Engineering/Ergonomics (3 cr.)**

Fall

Physiological and psychological abilities in human/machine interface, working performance, reliability, comfort and safety; effective design of people and work environment as a cybernetic system.

**RC-588 Construction Safety (3 cr.)**

Fall and Spring

Analysis of hazards, control procedures and systems related to typical construction equipment, tools and materials safety problems.

**RC-589 Fleet Risk Control Management (3 cr.)**

Spring

Overview of logistically-oriented management systems required to control risk in fleet operations including internal standards development/analysis, emergency response, accident analysis, loss benchmarking, driver selection and training, vehicle operation, substance abuse testing, hours of service, vehicle maintenance/ inspection, route planning, cargo/personnel security, hazardous materials transportation, and regulatory controls.

**RC-592 Construction Risk Management (3 cr.)**

Fall

Analysis and application of fundamental process steps for construction job site risk management.

**RC-595 Emergency Preparedness and Response (3 cr.)**

Spring

Specific emergency response plans that meet federal, state and local regulations.

**RC-640 Environmental Leadership and Sustainability Management (3 cr.)**

Analysis and evaluation of topics related to environmental leadership and sustainability management. Environmental and sustainability issues and management challenges will be explored to promote cost-effective management strategies.

P: RC-583

**RC-725 Process Hazard Management (3 cr.)**

Fall

Understanding and proper application of various process hazard management techniques. Identify hazards, assess their risk frequency and severity; define countermeasures (mitigation and elimination).

**RC-735 Field Problem in Risk Control (2-4 cr.)**

Fall, Spring and Summer

An operational experience which requires identification of a technical and/or administrative problem in an occupational setting. The problem is researched, analyzed for alternative operational countermeasures, and field tested to determine the effectiveness of the solutions. \$

**RC-781 Risk Management Applications (3 cr.)**

Fall

A broad spectrum of risk management topics, including the risk management process, risk assessment, and several alternative risk transfer techniques.

**RC-782 Loss Control Systems (3 cr.)**

Spring

In-depth investigation, application and evaluation of current managerial practices, which are specifically and uniquely related to managing loss/risk control processes and systems.

**RC-784 Internship-Risk Control (2-4 cr.)**

Fall, Spring and Summer

Full-time, supervised work and learning experience in an appropriate professional setting.

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## RD Design, Research and Development

**RD-520 Prototype Development and Model Making (3 cr.)**

Introduction to model making and prototype development/construction. Competencies are developed in converting design, research and development and other creative ideas into three-dimensional objects using traditional and nontraditional machining and forming techniques. Three-dimensional design form the core of this course.

**RD-620 Research and Development (2 cr.)**

Research and development procedures applied to specific industrial material and processing problems.

Corequisite: RD-621

### **RD-621 Research and Development Laboratory (1 cr.)**

This lab is taken in conjunction with RD-620 to allow students in technical majors to fulfill the requirements of the major research and design project.

Corequisite: RD-620.

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## **RDGED Reading Education**

### **RDGED-701 Developmental Reading K-12 3 cr.**

Concepts, methods, research, and historical developments that form the foundations of teaching reading. Pedagogical considerations, including general conditions for learning to read and write; developmental phases of reading; principles of good reading instruction; development of a personal philosophy about teaching reading as a reflective practitioner.

### **RDGED-702 Reading in the Content Areas K-12 3 cr.**

Research-based teaching methods, study strategies, and technology focusing on the abilities to use language processes (*reading, writing, speaking, listening*) to learn subject matter across the curriculum. Consideration will be given to individual differences among readers in relationship to the cultural and political aspects of content literacy.

### **RDGED-703 Children's Literature in the Reading Program 3 cr.**

Evaluation, selection, and teaching of literature in the elementary school language arts program with a focus on historically significant books, authors and illustrators writing for today's young readers.

### **RDGED-704 Young Adult Literature in the Reading Program 3 cr.**

Designing strategies to build an appreciation of literature, motivating life-long readers, and using literature to encourage critical thinking across the curriculum. Topics include the nature of teen-age readers, genres of young adult literature, and its use in classroom curriculum.

### **RDGED-705 Instructional Techniques:**

#### **Students With Reading Difficulties 3 cr.**

Integration of psycholinguistic theory into an interactive strategic model of remedial interventions based on the foundational research of literacy acquisition in a community environment. Integrating reading, writing and spelling into an effective and viable program for struggling readers and special populations, including the learning disabled.

### **RDGED-706 Assessment and Evaluation of Language and Reading Development 3 cr.**

Interrelationship of assessment and evaluation to literacy development including current research in reading and language arts practices. Selection, administration and interpretation of formative and summative literacy assessments for the purpose of evaluating reading and language processes.

### **RDGED-707 Reading Teacher Practicum 3 cr.**

Practicum in teaching individual students, grades 1-12, with reading difficulties. Assessment of the reader's strengths and needs is followed by the implementation of individualized instruction designed to assist the child to become a better reader.

### **RDGED-720 Guiding and Directing Reading Programs 3 cr.**

Organization, administration, and supervision of reading programs (Pre-K through 12). Examine roles of reading personnel, evaluate existing literacy programs, and determine procedures to improve reading achievement. Methods for guiding classroom teachers to develop and implement literacy curricula through advisement and professional development. Pass Benchmark I of the Reading Specialist Program.

## REHAB Vocational Rehabilitation

### **REHAB-500 Special Topics in Rehabilitation 1-2 cr.**

Special topics not available through regular courses. Instructor's consent required. R

### **REHAB-500G Grantsmanship in the Helping Professions 1-2 cr.**

Summer Session

Explore grant writing in human service occupations and the necessity for such proposals as an element of change in society. Methods used to seek funding sources and evaluate requests for proposals.

### **REHAB-500M Psychophysiological Approaches to Chronic Muscle Problems in Community-Based Rehabilitation Services 1 cr.**

To enable individuals to develop skills in several psychological and somatic treatments for problems of chronic muscle tension in athletic settings. \$

### **REHAB-500N Community-Based Rehabilitation Services 1 cr.**

An examination of national priorities for community-based services designed to enhance competitive employment options for severely disabled persons.

### **REHAB-505 Sign Language I 3 cr.**

Fall Semester

Basic course in manual communication with persons who are deaf. Intensive practice in expressive and receptive communication.

### **REHAB-506 Sign Language II 3 cr.**

Spring Semester

Intermediate course in manual communication with persons who are deaf. American Sign Language, increasing sign vocabulary and communication speed.

Prerequisites: take REHAB-505.

### **REHAB-520 Rehabilitation and Chemical Dependency 3 cr.**

Spring Semester

Chemical use and abuse with emphasis on the rehabilitation of persons who are chemically dependent and the historical and sociological implications of drug usage.

### **REHAB-521 Rehabilitation of Public Offenders 3 cr.**

Fall Semester

Emphasis on programs designed to rehabilitate persons who are public offenders and sociological issues connected with the judicial system.

### **REHAB-527 Psychiatric Rehabilitation 3 cr.**

Fall Semester

Goals and processes of psychiatric rehabilitation. Knowledge and application of skills for integrating diagnosis into planning and intervention with a focus on rehabilitation services for individuals with long-term mental illness in community-based settings.

### **REHAB-550 Independent Living 2 cr.**

Fall Semester

An overview of independent living programs in this country including evolution, goals, methods of service delivery, and management of the independent living program.

**REHAB-555 Rehabilitation of the Older Disabled Worker 2 cr.**

Develop awareness and understanding of older disabled workers with a focus on implementing rehabilitation planning that enables continued participation in the work force or reinsertion into it following disability.

**REHAB-560 Assistive Technology 2 cr.**

Fall and Spring Semester

Provision of technology to enhance the lives of persons with disabilities. Delivery system, legislation, and issues related to funding are examined. Specific applications in communication, computers, mobility, and workstations and other technologies are reviewed.

**REHAB-565 Laboratory in Rehabilitation Technology 2 cr.**

Spring Semester

Experience utilizing technological aids/devices developed for persons with disabilities. Modify/adapt equipment to meet specific functional requirements. Construct switch/control mechanisms for equipment. Develop prototype solutions to vocational and independent living problems..

**REHAB-602 Management of Non-Profit Organizations 3 cr.**

Spring Semester

Principles and practices in the operation of non-profit organizations. Comparison of how non-profit and for-profit operations are affected by organizational structures and authority, budgeting practices, sources of income, personnel issues, strategic planning and program evaluation, and marketing. Application to community agencies.

**REHAB-620 Psychological Testing People With Exceptional Needs 2-3 cr.**

Fall, Spring and Summer Semesters

Use of common psychometric tests with specific emphasis on selection, evaluation, administration, scoring, and interpretation of standardized tests for individuals who are disabled, including those from various ethnic and cultural groups.

**REHAB-659 Workforce Development, Disability, and Socioeconomics 3 cr.**

Macro/micro influences that keep people unemployed and underemployed, including community, services, providers, employers, and families. Interface among legislative initiatives, disability, and life/work. Policy, strategies, and skills that promote effective intervention and change. Intended for professionals in the field.

**REHAB-660 Rehabilitation in the Private Sector 3 cr.**

Spring Semester

Case coordination to support maximum medical recovery and/or vocational rehabilitation of an injured person involved in insurance funded cases. Differences between public and private rehabilitation processes. Interviewing, planning, assessing transferable skills, placing in suitable work, and communicating with other involved individuals. Business practices, professional roles, and ethical issues.

**REHAB-661 Forensics For the Human Service Professional 2 cr.**

Spring Semester

Terminology and practices associated with forensics for human service professionals. Strategies and materials related to preparation for testimony and expert witness testimony in a court of law and other legal settings.

**REHAB-662 Absence Management 3 cr.**

Fall Semester

Orientation to workers with disabilities in business and industry. Focus is upon the elimination of attitudinal and environmental barriers as they pertain to hiring, productivity, and retention of workers with disabilities. Governmental requirements, linkage between business, community resources, and rehabilitation.

### **REHAB-670 Work Adjustment Services 2-3 cr.**

Fall and Summer Semester

Principles and procedures of adjustment services. Emphasis upon the change and improvement of behavior. Supervised practical experience in interviewing, behavior observation, individual work adjustment planning, lesson plan and report writing.

### **REHAB-681 Application of Theories in Rehabilitation Counseling 3 cr.**

Major theories and techniques used in rehabilitation counseling. Development of skills in the use of basic counseling techniques with individuals who are disabled and including those from various ethnic and cultural groups.

### **REHAB-682 Sexuality and Disability 2 cr.**

Investigate sexuality as an integral part of the disability experience. Explore programs, techniques and personal biases in relation to sexuality of persons with disabilities.

### **REHAB-683 Vocational Counseling Issues 2 cr.**

Summer Session

Theoretical and applied approaches to vocational counseling and current research in vocational choice and career development as related to vocational counseling.

### **REHAB-688 Developing Collaborative Partnerships 3 cr.**

Fall Semester

Development of professional relationships that are characterized by collaboration and respect for the consumer or student. Role of team members including human service professionals, consumer student, family members, school personnel, and community organization staff in collaborative decision making. Enhanced service delivery responsiveness through application of collaborative principles.

### **REHAB-700 Seminar--Vocational Rehabilitation 1-2 cr.**

A seminar course devoted to the field of vocational rehabilitation and subject materials pertinent to the field.

### **REHAB-701 Foundations of Rehabilitation 3 cr.**

Fall Semester

Foundations of rehabilitation including its philosophical foundation, historical development, organization; professional roles, responsibilities, and practices; and future trends.

### **REHAB-705 Practicum in Rehabilitation Leadership 3 cr.**

Practical experience in leadership within rehabilitation organizations. Leaders' roles may be demonstrated through experiences in fiscal management, human resource management, strategic planning, staff development, contract negotiations and production management.

### **REHAB-707 Practicum in Vocational Evaluation 4 cr.**

Fall Semester

A supervised experience that integrates vocational evaluation course material. The student will plan, conduct and communicate findings of comprehensive vocational evaluations with consumers who are disabled.

Prerequisites: take REHAB-620, REHAB-717, REHAB-723, REHAB-724; minimum grade B.

### **REHAB-708 Practicum in Rehabilitation Counseling 3 cr.**

150 hours of supervised clinical experience in a rehabilitation setting. The student will perform entry-level duties of a rehabilitation counselor.

Prerequisites: take COUN-750; minimum grade B.

### **REHAB-710 Rehabilitation Implications of Sensory Impairment 3 cr.**

Summer

Medical, psychosocial, and vocational implications of sensory disabilities. Disabling conditions affecting all five senses, with particular emphasis on hearing and visual impairments.

### **REHAB-713 Aspects of Disability: Physical Disabilities 3 cr.**

Fall Semester

Study of major physical disabilities including medical aspects and the psycho-social and vocational implications. Will cover the existence, onset, severity, progression and expected duration of disabilities. Minimum grade B.

### **REHAB-714 Aspects of Disability: Cognitive 3 cr.**

Spring Semester

Major cognitive and psychiatric disabilities and their medical, psycho-social, and vocational implications. Incidence, onset, severity, progression and expected duration mental retardation, learning disability, mental illness, brain injury and disease. Minimum grade B.

### **REHAB-715 Research in Rehabilitation and Counseling 3 cr.**

Fall

Basic research methods and design used to determine the effectiveness of rehabilitation services and outcomes. Statistical techniques, research terminology and design, ethical and legal implications of human subjects' research in quantitative and qualitative research applications. Critically analyze research and skill application through development of a practice-related research proposal.

### **REHAB-717 Occupational Analysis and Job Placement 3 cr.**

Fall Semester

Application of occupational analysis, career information, and placement concepts to the practice of job placement of persons with a disability. Includes job development/search techniques and the nature and critical impacting factors of the placement process.

### **REHAB-723 Procedures of Vocational Evaluation 3 cr.**

Spring Semester

Basic philosophies, practices, and processes of vocational evaluation applied to individuals with disabilities. Knowledge of specific assessment tools/instruments and application of clinical skills needed to analyze relevant information for program and career planning, identify significant behaviors, interpret findings to others and communicate assessment result.

### **REHAB-724 Laboratory in Vocational Evaluation 3 cr.**

Spring Semester

Application of the procedures and utilization of the tools of vocational evaluation including interviews, individual evaluation plans, standardized tests, vocational counseling, work samples, situational assessments, work-related behavioral observations. Interpret and communicate findings in a comprehensive vocational evaluation report. Minimum grade B

Co-requisite courses: REHAB-723. .

### **REHAB-735 Problems in Vocational Rehabilitation 2 cr.**

Identification, selection, and completion of a problem in vocational rehabilitation. The problem project will

culminate in a Plan B paper. Intervention focusing on the family as the consumer of rehabilitation services.

Prerequisites: take EDUC-740. \$

### **REHAB-764 Case Coordination 3 cr.**

Fall Semester

Concepts and philosophy of the case coordination in rehabilitation applied to various employment settings. Integration of consumer case study data, identification of service need and plan development.

Prerequisites: take REHAB-713 REHAB-714.

### **REHAB-770 Thesis -- Vocational Rehabilitation 2-6 cr.**

Independent research under direction of investigation adviser. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of method of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for 2, 4, or 6 semester hours of credit in various terms with a final total of six. Consent of Program Director.

Prerequisites: take EDUC-740. R \$

### **REHAB-780 Leadership and Management in Vocational Rehabilitation 2 cr.**

Leadership theories and rehabilitation organization concepts emphasizing continual skill building of leaders. Roles and responsibilities of leadership in promoting quality of business practices and partnerships. Response to system change, public policy, emerging trends, and ethical principles. Admission to MS Vocational Rehabilitation.

### **REHAB-783 Internship in Vocational Evaluation 6 cr.**

A culminating practical experience using the tools and techniques of vocational evaluation to perform tasks of interviewing, planning, counseling, administering assessment tasks, observing, and reporting. Must be M.S. Degree Candidate.

Prerequisites: take REHAB-707; minimum grade B.

### **REHAB-785 Internship in Rehabilitation Leadership 6 cr.**

Fall, Spring and Summer Semesters

A culminating practical experience in providing leadership to accomplish organizational goals. Tasks in fiscal, personnel, program development, fund raising, production, marketing, and contract procurement. Must be a M.S. degree candidate. Must be M.S. Degree Candidate.

Prerequisites: take REHAB-705; minimum grade B.

### **REHAB-787 Internship in Rehabilitation Counseling 6 cr.**

Fall, Spring and Summer Semester

Culminating practical experience in rehabilitation counseling performing tasks from intake to discharge and/or placement. Application of history, philosophy, and structure of rehabilitation delivery systems; counseling to individuals, groups, and/or families; vocational and career development; assessment, planning and case management; and job development, placement, and retention. Must be M.S. Degree Candidate.

Prerequisites: take COUN-788 or REHAB-708; minimum grade B. R

### **REHAB-798 Field Experience in Rehabilitation 1-2 cr.**

Off-campus work and study in an approved position to better understand the challenges and potentials of various rehabilitation type careers.



## SCIED Science Education

### **SCIED-501 Science Education Methods (3 cr.)**

Fall

Methods of teaching science; theories and applications, issues and trends. Benchmark I Completed.

### **SCIED-560 Science Education Curriculum and Assessment (3 cr.)**

Fall

Curriculum and assessment for teaching science; theories and applications, issues and trends. Benchmark I Completed.

### **SCIED-609 Student Teaching – Science Education (8-16 cr.)**

Spring

Student teaching experiences in science education. Benchmark I Completed.

### **SCIED-610 Biology Student Teaching (4-16 cr.)**

Fall, Spring and Summer

Student teaching experience in biology. Benchmark II Completed.

### **SCIED-611 Chemistry Student Teaching (4-16 cr.)**

Fall, Spring and Summer

Student teaching experience in chemistry. Benchmark II completed.

### **SCIED-612 Physics Student Teaching (4-16 cr.)**

Fall, Spring and Summer

Student teaching experience in physics. Benchmark II completed.

### **SCIED-613 Broadfield Science Teaching Internship (4-16 cr.)**

Fall, Spring and Summer

Internship experience in teaching broadfield science. Benchmark II completed.

### **SCIED-614 Biology Teaching Internship (4-16 cr.)**

Fall, Spring and Summer

Internship Experience in teaching biology. Benchmark II completed.

### **SCIED-615 Chemistry Teaching Internship (4-16 cr.)**

Spring

Internship experience in teaching chemistry. Benchmark II Completed.

### **SCIED-616 Physics Teaching Internship (4-16 cr.)**

Fall, Spring and Summer

Internship experience in teaching physics. Benchmark II completed.

### **SCIED-688 Internship Teaching – Science Education (8-16 cr.)**

Spring

Alternative to student teaching experience: licensed and salaried internship in a cooperating school. Benchmark II Completion.

### **SCIED-710 Current Topics in Science for Teachers (3 cr.)**

Summer

Current topics, issues and events in the field of science and how they might be incorporated in the curriculum and instruction of science courses

## SCOUN School Counseling

### **SCOUN-501 Introduction to Guidance** (2 cr.)

Fall, Spring and Summer

Policies and practices of organized guidance programs in educational settings; historical, philosophical and cultural bases for guidance services; guidance techniques for teachers; cooperative efforts of teachers, parents and counselors.

### **SCOUN-600 Workshop: Counseling/Psychological Services** (1-3 cr.)

Fall and Summer **R**

### **SCOUN-605 Emerging Issues in School Counseling** (2 cr.)

Fall, Spring and Summer

Identify, explore and research issues and trends impacting practice and resources in school counseling. Student must be currently employed in a school setting or licensed to work in schools.

### **SCOUN-647 Emotional and Behavioral Problems of Children and Adolescents** (3 cr.)

Spring and Summer

Assessment, identification and evaluation of emotional and behavioral disorders of learners middle childhood through adolescence, including methods of observing, diagnosing, documenting and interpreting. Characteristics of emotional and behavioral disabled learners, including potential concomitant physical, cognitive, or sensory disabilities and psychological, social and environmental factors contributing to childhood emotional and behavioral disorders.

### **SCOUN-705 Play Therapy** (2 cr.)

Fall, Spring and Summer

Study of play therapy theory, research, and utility in school and clinical settings. Application of play-based assessment, treatment planning, and therapeutic skills through supervised laboratory experience.

### **SCOUN-727 Supervision of Pupil Services** (1 cr.)

Theories, strategies and models of school-based supervision of school counseling and school psychology students. Ethical guidelines, best practice strategies, supervisory roles, and supervision standards for individuals responsible for supervising practicum students and interns are addressed. Not intended for use in degree program. Prerequisite: Instructor approval

### **SCOUN-733 Lifespan Career Development** (3 cr.)

Fall and Summer

Study and application of career development and theories from a lifespan perspective. Examination of established and emerging labor markets, economic and social forces likely to impact career development and choice. Access, implementation, and evaluation of information systems. Application of assessment tools and techniques.

### **SCOUN-735 Problems in Counseling and Psychological Services** (2 cr.)

Plan B investigations are the primary purpose of this course. Students who are ready to write their Plan B paper should register for this course and then confer with the major advisor to select a staff member who will serve as an investigation adviser. Meetings with the advisor are by arrangement only. \$

### **SCOUN-738 Guidance in the Elementary School** (2 cr.)

Spring and Alternating Summers

Nature and conditions of guidance in elementary schools; curricular and non-curricular guidance techniques, referrals, parent counseling; guidance principles and practices applied to elementary school child.

Prerequisites: take COUN-675.

### **SCOUN-760 Theories and Techniques of Behavior Modification** (2 cr.)

Fall and Spring

Theoretical and empirical bases for utilizing behavior modification procedures in schools, clinics and other institutions. Emphasizes role of behavioral consultant.

Prerequisites: take PSYC-530 or PSYC-730.

**SCOUN-765 Professional Orientation: School Counseling (3 cr.)**

Spring and Alternating Summers

Orientation to school counseling history, professional roles and functions, and programming models. Credentialing processes, professional organizations, public policies related to school counseling.

Prerequisites: take COUN-750.

**SCOUN-770 Thesis (2-6 cr.)**

Fall, Spring and Summer

Independent research under direction of investigation adviser. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of method of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for 2, 4 or 6 semester hours of credit in various terms with a final total of six. Consent of program director.

Prerequisites: take EDUC-740. **R\$**

**SCOUN-782 PK-12 Developmental Guidance Curriculum (3 cr.)**

Strategies and techniques for designing and delivering PK-12 developmental guidance curriculum. National and state student standards and benchmarks as framework for curriculum design. Instructional and facilitation strategies, classroom management, evaluation processes for elementary, middle, and high school group/classroom guidance. Admission to the MS in Guidance and Counseling program.

Prerequisites: take COUN-750 and SCOUN-765.

**SCOUN-787 Career/Occupational Placement and Transitions (2 cr.)**

Spring and Summer

Theories, design, development, and implementation of career, school to work, and occupational placement systems in PK-12 schools, post-secondary schools, public and private agencies.

Prerequisites: take SCOUN-733.

**SCOUN-788 School Counseling Practicum (2-3 cr.)**

Fall and Spring

Application of individual, small group, and large group guidance and counseling techniques in school setting. Supervised practice for a minimum of 100 hours on site, with additional campus-based supervision.

Prerequisites: take COUN-750, COUN-788.

**SCOUN-789 Elementary School Counseling Internship (3-6 cr.)**

Practical experience in school counseling in a K-8 school setting for a minimum of 300 hours. Application of counselor competencies and utilization of professional school counseling skills under supervision. Instructor's signature required. Co-requisite: SCOUN-793.

**SCOUN-790 Secondary School Counseling Internship (3-6 cr.)**

Fall and Spring

Practical experience in school counseling in a 9-12 school setting for a minimum of 300 hours. Application of counselor competencies and utilization of professional school counseling skills under supervision. Instructor's signature required. Co-requisite: SCOUN-793.

**SCOUN-791 Internship in Guidance and Counseling (6 cr.)**

Fall and Spring

The student will devote a minimum of 360 hours, full-time (each quarter) in a local school serving as a school counselor. In this experience, they will be supervised by university personnel and work with a fully certified local school counselor. Experiences include all aspects of the guidance function.

Prerequisites: take SCOUN-790. **R**

**SCOUN-792 Post-Secondary Career Counseling Practicum (3 cr.)**

Closely supervised career counseling experience at a postsecondary career counseling center.

Prerequisites: take SCOUN-733, SCOUN-787.

**SCOUN-793 School Counseling Internship Seminar (2 cr.)**

Case consultation and group supervision activities to accompany field-based application of school counseling knowledge and skills.

**SCOUN-892 Advanced Counseling Practicum (2 cr.)**

Fall, Spring and Summer

Clinical supervised counseling experiences in a variety of school institutional and agency settings. Designed to assist the student to more adequately understand and apply the dynamics of human behavior in the one-to-one counseling relationship. A minimum of 60 to 90 clock hours of experience is required.

Prerequisites: take SCOUN-790. **R**

**SCOUN-895 Field Study**(2-6 cr.)

Fall, Spring and Summer

Experience in action-type field research in pupil personnel services. The student will identify and research a topic directly related to his career position. Preparation and presentation of a formal report of the study to appropriate personnel. Student may enroll for 2, 4 or 6 semester hours of credit in various terms with a final total of six. **R \$**

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## SOC Sociology

**SOC-525 Sociology of Leisure** (3 cr.)

Fall and Spring

Institutional approach to effects of leisure on social structure; values reflected in leisure; problems with increase in leisure resources.

**SOC-540 Sociology of Work** (3 cr.)

Fall and Spring

Human behavior in various types of employment and occupations; trends in U.S. occupational structure.

**SOC-550 Sociology of Hmong Culture** (1 cr.)

Sociological overview of Hmong cultural values, history, immigration and resettlement experiences, family and clan functions, and spiritual beliefs and practices. **\$**

**SOC-560 Sociology of Juvenile Delinquency** (3 cr.)

Fall and Spring

Theories of delinquency, criminal behavior, and social control in relation to modern institutions in American culture.

**SOC-610 Sociology of Thailand's Minority Groups: Study Abroad Program** (4 cr.)

Summer

Study abroad program to Thailand. In-depth experiential learning of Thai minority cultures, including religions, socio-political status, Buddhism, health, education, trafficking of women and children, limited citizenship status, and poverty. Field trips to villages, non-governmental agencies, schools, and clinics.

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## SPCOM Speech Communication

**SPCOM-508 Speech Skills For Business and Industry** (2 cr.)

Fall, Spring and Summer

Technical speaking; projects in application of speech skills and activities in business and industry.

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## SPED Special Education

**SPED-500 Introduction to Individuals With Cognitive Disabilities (3 cr.)**

Fall

Introduction to etiology of mental retardation; psychological, educational, social and vocational aspects; adjustment techniques used in working with mentally retarded persons.

**SPED-501 Learning Disabilities (3 cr.)**

Spring

Identification, remediation and evaluation of learning disabled; intervention techniques used with adolescents and adults.

**SPED-505 Introduction to Early Childhood Special Education (2 cr.)**

Summer

Introduction to the history and purpose of Early Childhood - Special Education programming, legislation, population receiving services, family intervention, intervention models and issues. Prerequisites: SPED-430 or SPED-630.

**SPED-510 Methods, Materials and Curriculum for the Exceptional Child (3 cr.)**

Fall

Curricular and methodological adaptation for young children with exceptional educational needs in the areas of social-emotional development, manipulative and motor skills, self-help skills, communication, cognitive development, and creative expression.

Prerequisites: SPED-505; Admission to Early Childhood -- Special Education Certification Track.

**SPED-515 Early Childhood Special Education Programming (3 cr.)**

Spring

Organization and implementation of Early Childhood Special Education programs, including service delivery, program models, consultation and collaboration, and intervention agents.

Prerequisites: SPED-505, SPED-510.

**SPED-518 Introduction to Teaching/Assessment in Special Education (2 cr.)**

Fall, Spring and Summer

Provides one-on-one, supervised experience in teaching youth with exceptional education need (EEN). Provides the initial opportunity for the student to teach a young person with EEN in a supervised setting for 50 hours.

**SPED-520 Early Childhood Exceptional Educational Needs Assessment (2 cr.)**

Summer

Assessment and diagnosis of the young child with a suspected disability. Norm reference, criterion referenced, and play-based assessment in the following areas: cognitive, motor, speech/language social/emotional, and family.

Prerequisites: SPED-515; Admission to Early Childhood -- Special Education Certification Track.

**SPED-522 Curriculum and Instruction: Functional Living Skills (2 cr.)**

Spring

Curriculum and instructional techniques for developing basic functional living skills for persons with cognitive disabilities, borderline and severe. Prerequisites: SPED-500, SPED-630.

**SPED-523 Mild Disabilities: Social Studies and Science (3 cr.)**

Fall and Spring

Curriculum and methods of teaching students with mild cognitive, learning, and emotional/behavioral disabilities in the content areas of social studies, science, and in general education. Strategies that facilitate integration, improve maintenance and generalization of skills, promote transitions, increase self-awareness and self- management, and compensate for learning deficits.

**SPED-524 Curriculum and Instruction: Career and Transition Education (3 cr.)**

Fall

Curriculum and instruction for persons with cognitive disabilities, borderline and severe, in prevocational career, vocational education, and transition stressing interdisciplinary cooperation. Prerequisites: SPED-500, SPED-630.

**SPED-526 Pre-Student Teaching: Cognitive Disabilities (2 cr.)**

Fall

Supervised experience in observing, planning instruction, and teaching children and youth with cognitive disabilities in a cross-categorical school environment. Repeatable three times for credit. **R**

**SPED-528 Assessment for Individual Education/Transition Plans (3 cr.)**

Fall, Spring and Summer

Diagnosing behavior and learning problems of students with exceptional education needs. Preparing individual educational and transitional plans based on comprehensive assessments.

Prerequisites: REHAB-620.

**SPED-530 Introduction To Communication Disorders (3 cr.)**

Fall

Nature, causes of and methods used when working with individuals who have speech and language disorders.

**SPED-538 Pre-Student Teaching: Children and Youth With Disabilities (2 cr.)**

Fall, Spring and Summer

Supervised experience in observing, planning instruction, and teaching children and youth with disabilities in a cross-categorical school environment.

**SPED-600 Workshop: Topics in Special Education (1-3 cr.)**

Summer

Current specialized topics studied through experiential activities.

**SPED-620 Schools, Families and Community Collaboration (3 cr.)**

Theory, general principles and procedures for fostering collaborative partnerships among families, professionals, students and other service providers. Focuses on families with children who have disabilities.

**SPED-640 Diagnosis and Remediation of Literacy and Math Disabilities (4 cr.)**

Curriculum, methods, assessment and remediation of teaching reading, math, and language to individuals with mild disabilities. Strategies that assess and evaluate, monitor progress, increase, maintain and generalize skills, facilitate integration, and compensate for learning deficits in the general and special education curricula.

Prerequisites: EDUC-580, EDUC-581, and EDUC-582

**SPED-630 Inclusion of Students With Exceptional Needs (3 cr.)**

Fall, Spring and Summer

Inclusion of students with exceptional educational needs in the regular classroom setting. Laws, definition, characteristics, adaptations, strategies and transitional services that pertain to persons identified with: cognitive disability, learning disability, attention deficit hyperactivity disorder, emotional disability, autism, traumatic brain injury, speech and language disorders, visual and hearing loss, physical and other health impairments, and gifted and talented.

**SPED-647 Emotional and Behavioral Problems of Children and Adolescents (3 cr.)**

Spring and Summer

Assessment, identification and evaluation of emotional and behavioral disorders of learners middle childhood through adolescence, including methods of observing, diagnosing, documenting and interpreting. Characteristics of emotional and behavioral disabled learners, including potential concomitant physical, cognitive, or sensory disabilities and psychological, social and environmental factors contributing to childhood emotional and behavioral disorders.

**SPED-662 Classroom Management Techniques (3 cr.)**

Spring

Techniques for motivating handicapped youth, individual and group discipline, behavior modification, educational organization, evaluation, and communication to enhance learning.

**SPED-682 Student Teaching Early Childhood-Special Education (8 cr.)**

Directed teaching and community experiences in selected infant-toddler, preschool, or school based programs for children with disabilities. Admission to Early Childhood -- Special Education Certification Track.

Prerequisites: SPED-520, SPED-630.

**SPED-689 Intern Teaching Early Childhood-Special Education (8-16 cr.)**

Directed teaching and community experiences in selected infant, toddler, preschool, or primary school-based programs for children with disabilities.

Prerequisites: SPED-520.

### **SPED-690 Behavioral Interventions in the Schools (2 cr.)**

Fall and Spring

Study and practice in Functional Behavioral Assessment and Behavioral Intervention Planning for individualized behavior problems in the PK-12 educational setting using both a direct-service and consultation-collaboration model. Focus on assessment skills to produce data-driven environmental modifications, pro-social replacement behaviors, consequence strategies, and home-school interventions.

### **SPED-799 Independent Study (1-3 cr.)**

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## **SPSY School Psychology**

### **SPSY-690 Behavioral Interventions in the Schools (2 cr.)**

Fall and Spring

Study and practice in Functional Behavioral Assessment and Behavioral Intervention Planning for individualized behavior problems in the PK-12 educational setting using both a direct-service and consultation-collaboration model. Focus on assessment skills to produce data-driven environmental modifications, pro-social replacement behaviors, consequence strategies, and home-school interventions.

### **SPSY-701 Roles and Functions of School Psychologists (2 cr.)**

Summer

Overview of the history, roles and functions of school psychologists (nationally and regionally) are explored. Readings in contemporary issues and historical events provide the foundation for graduate preparation in school psychology. Students observe the work of school psychologists and discuss the profession in a seminar format.

### **SPSY-710 Psychoeducational Assessment of Young Children (2 cr.).**

Fall

Assessment of the young child with a suspected disability and his/her family, training in the norm referenced, criterion referenced, and play-based assessment of young children.

Prerequisite: SPSY-753.

### **SPSY-727 Supervision in Pupil Services (1 cr.)**

Theories, strategies and models of school-based supervision of school counseling and school psychology students. Ethical guidelines, best practice strategies, supervisory roles, and supervision standards for individuals responsible for supervising practicum students and interns are addressed. Not intended for use in a degree program.

Prerequisite: Instructor approval.

### **SPSY-735 Problems in School Psychology (2 cr.)**

Fall, Spring and Summer

Independent investigation into a carefully delineated area of school psychological services in an attempt to bring evidence to bear on a problem. The use of research techniques is required. Reporting of the study is expected to meet the standards appropriate to scholarly writing by professionals in the field.

Prerequisite: EDUC-740.

### **SPSY-743 Cognitive Assessment (3 cr.)**



Spring

Supervised practice in the administration, scoring and interpretation of individual tests of cognitive abilities. Emphasis is directed toward the evaluation of intellectual ability, the examination of strengths and weaknesses in cognitive processing, the integration of findings in psycho-educational reports, and intervention planning for individual clients. Prerequisites: take SPSY-753, SPSY-753B.

**SPSY-745 Social, Emotional, and Behavioral Assessment of Youth** (2 cr.)

Theoretical and applied aspects of clinical assessment methods and techniques for evaluating the social, behavioral, and emotional functioning of children and adolescents through the use of various objective and projective assessment tools and techniques.

**SPSY-753 Psychometric Theory and Application** (2cr.)

Fall and Summer

Introduction to psychoeducational theory and concepts in relation to inter- and intra-individual assessment. Covers basic statistics, in regard to test construction, test uses and misuses, test selection, purposes of testing, ethics, basic test interpretation processes and types of tests and testing programs frequently employed by psychoeducational specialists.

**SPSY-753A School Counseling Assessment Laboratory** (1 cr.)

Fall and Summer

Introduction to assessment materials and techniques employed by school counselors. Individual inventories, aptitude and achievement tests, problem surveys and other student assessment materials.

Prerequisite or corequisite: SPSY-753.

**SPSY-753B Laboratory: School Psychology** (1 cr.)

Fall

Introduction to basic psychometric materials and techniques employed by school psychologists. Emphasis is placed upon individual mental tests and procedures. Prerequisite or corequisite: SPSY-753.

**SPSY-768 Learning Disabilities: Assessment and Intervention** (3 cr.)

Principles and techniques used in assessing, instructing, and identifying students with academic delays and/or learning disabilities. Historical perspectives, current research, and strategies for students at risk for and with learning disabilities is examined and evaluated. Applied practice in academic interventions and academic assessment techniques is utilized.

Prerequisites: take SPSY-753.

**SPSY-770 Thesis** (2-6 cr.)

Fall, Spring and Summer

Independent research under direction of investigation advisor. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of method of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for two, four or six semester hours of credit in various terms with a final total of six. Consent of program director.

Prerequisite: EDUC-740. R

**SPSY-775 School Consultation** (2 cr.)

Spring

Comprehensive overview of theories and processes of psychological and educational consultation. Training in specific consultative skills through use of role-play, feedback, and homework assignments.

**SPSY-777 Legal/Ethical Issues for School Counselors and Psychologists** (2 cr.)

Fall and Spring

Investigation of laws, legal systems, professional ethics, administrative codes, and other legal and ethical issues as applied to professional practice of school counselors and school psychologists.

**SPSY-778 Psychoeducational Disability** (3 cr.)

Fall

Etiology, characteristics, and Individual Educational Program (IEP) development for children with Exceptional Educational Needs (EEN) such as mental retardation, emotional disturbances, behavioral disorders, social/cultural deviation and multi-handicapping conditions.

**SPSY-781 Field Practicum in Psychoeducational Services I (3 cr.)**

Fall and Spring

Provides the prospective school psychologist with the initial "on site" experience of functioning as a school psychologist. Special educational evaluations, programming and introduction to complex cases and staffings.

Prerequisites: SPSY-743, SPSY-768.

**SPSY-782 Field Practicum in Psychoeducational Services II (3 cr.)**

Fall and Spring

Provides continuing "on site" experience of functioning as a school psychologist. Increased applications of expanded assessment skills, more complex diagnostic problems, intervention techniques and leadership roles within the placement setting.

Prerequisite: SPSY-781.

**SPSY-784 Clinical Practicum in Psychoeducational Services I (2 cr.)**

Fall, Spring and Summer

This practicum course is designed to provide more intensive and extensive clinical experiences. Work with pre-school children, post-school young adults, school age children and their parents. Special assessment and intervention techniques are emphasized.

Prerequisites: SPSY-743, SPSY-768.

**SPSY-785 Clinical Practicum in Psychoeducational Services II (2 cr.)**

Fall, Spring and Summer

Provides integrative learning experiences into the role and style of function appropriate to the individual and the profession. Long term therapeutic contacts are required. Experience in one or more areas of specialization is available.

Prerequisite: SPSY-784.

**SPSY-790 Systems-Level Prevention and Intervention (3 cr.)**

School-based prevention and intervention programs to address crises and systems-level needs. Principles of systems-level consultation, organizational change, universal screening procedures, intervention planning, program evaluation, and the analysis of evidence-based programs to promote the health and competence of youth are addressed. Practical experience in planning and evaluating school-based programs.

Prerequisite or Corequisite: SPSY-775.

**SPSY-792 Internship in School Psychology (6 cr.)**

The student will devote a minimum of 360 clock hours, full-time (one quarter) in supervised internship experiences. The student will be working with a certified school psychologist in local area schools and/or other approved personnel in other approved situations; e.g., a counseling psychologist in the APA approved University Counseling Center. R

**SPSY-870 Specialist Thesis in School Psychology (3-6 cr.)**

Independent research project. Selection of a research problem, review and critical analysis of literature and research, development of research plan and methodology, data collection, interpretation of findings and preparation of paper. Thesis orally presented and defended to thesis advisor and committee. Consent of program director. Admission to Ed.S. program required.

Prerequisite: EDUC-740. R

**SPSY-895 Applied Research Project in School Psychology (3-6 cr.)**

This course serves as an independent, applied research project in a school- or community-based setting. Documentation of an evidence-based rationale, development of methodology to implement project, collect data, and analyze results is required. An oral defense is required prior to final project approval. Prerequisites: take SPSY-735 or SPSY-770 R (6 maximum credits, 2 times)

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## SRVM Service Management

**SRVM-546 Seminar in Training and Development (1 cr.)**

Definition and analysis of high performance service management best practices.

**SRVM-620 International Service Concepts (3 cr.)**

National and cultural constraints and expectations that impact planning, execution and evaluation of service quality. Cultural, business, managerial, and behavioral foundations supporting success in an international service context.

**SRVM-621 Customer Interaction Center Management (3 cr.)**

Introduction to evaluation, design, maintenance, and management of online telephone technology to provide customer service solutions for industry in customer interaction centers.

**SRVM-681 Special Problems in Service Management (1-3 cr.) R**

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## STAT Statistics

**STAT-520 Statistical Methods 3 cr.**

Fall and Spring

Methods of describing data: graphical methods, numerical summary measures, exploratory data analysis. Probability, probability distributions, expected value. Sampling distributions. Statistical inference: estimation and hypothesis testing for one-sample and two-sample problems. Regression analysis. Demonstrating with standard statistical software packages. \$

**STAT-640 Advanced Linear Modeling-Regression and Time Series Analysis 3 cr.**

Fall

Multiple regression, inference about regression parameters, remedial regression measure, quantitative and qualitative regression, model selection/validation, nonlinear regression, neural networks, logistic and Poisson regression, generalized linear models, time series, smoothing, stochastic time series, moving average and autoregressive models, auto regressive integrated moving average (ARIMA), estimating and forecasting with time series. Instructor's consent required.

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## STMED Science, Technology and Mathematics Education

**STMED-601 Capstone: Mathematics and Science Education (1 cr.)**

Synthesis of material learned in the math and science education programs and study of educational research, evidence-based practice, and professional development. Prerequisite: Benchmark I completed.

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## SUST Sustainability

**SUST-515 Sustainable Engineering (3 cr.)**

Impact of engineering and design/manufacturing decisions on the environment. Topics include: sustainability, energy and material flows, risk assessment, multi-use product life cycles, manufacturing process waste streams, sustainable product design issues, end-of-life product handling, and pollution prevention techniques.

**SUST-632 Global Sustainability Experience in Design and Manufacturing (3 cr.)**

Cross-disciplinary exploration of ecologically friendly design, engineering, manufacturing, and business models. International travel component with corporate, cultural, academic, and civic leaders. Cultural, economic and political influences; product design; manufacturing; sustainability; application of current eco-friendly product design models; research topics; regional global visitation; studio and laboratory experiences; project and presentation.

**SUST-730 Sustainable Futures (3 cr.)**

Concepts of sustainable design and development. Explores methods/tools for assessing sustainable products and processes from economic, environmental, and societal perspectives. Policy and regulatory impact and cost benefit analysis. Industrial applications exploration through case study analysis.

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## **TECED Technology Education**

**TECED-525 Technology for Elementary School Children 2 cr.**

Fall, Spring and Summer

Development, philosophy, objectives and course organization for industrial arts for the elementary schools. Suitable laboratory work in woods, metals, plastics and drawing.

**TECED-530 Implementing Technology Education 3 cr.**

Fall, Spring and Summer

Converts the theory of contemporary technology education programs into instructional materials, facilities, and strategy suited to the secondary and post-secondary school.

**TECED-533 Planning Technical/Vocational Laboratories 2 cr.**

School shop facility planning: equipment selection, placement, care and management.

**TECED-540 Middle School Technology Education 2 cr.**

Fall, Spring and Summer

Reviews trends and activities in the technology education movement to update instructors to teach middle school offerings.

**TECED-575 Workshop: 1-3 cr.**

Current specialized topics in industrial education through experiential activities. Instructor's consent required.

**TECED-603 Activities in Technology/Vocational Education 2 cr.**

A study and design of learning activities for industrial and vocational education. Learning activities will be developed on selected levels of the cognitive, psychomotor, and affective domains to carry out stated behavioral objectives. An evaluation of the appropriateness of learning activities as presented in contemporary curriculum projects.

**TECED-631 Field Trips to Industry 1-3 cr.**

Opportunities are provided for industrial and vocational education majors as well as teachers to accumulate information about industries through local and distant on-site visits to industries. A third credit may be earned by showing evidence of application of data collected in courses being taught. **R \$**

**TECED-637 Organization/Management of Technical Laboratories 2 cr.**

Summer

Experience in administration, project development and teaching problems associated with industrial education.

**TECED-638 Course Construction 2 cr.**

Spring and Summer

Directed experience in curriculum development and course of study construction for industrial education teachers; development of behavioral objectives and of instructional materials to help reach these objectives; development of course of study, instructional package/unit of instruction.

**TECED-704 History/Philosophy Technology Education 2 cr.**

Fall and Summer

Evolution of modern industrial education through the people, movements, events and institutions that contributed to its formation. Developments and conditions in education and society also considered plus their relationship to the theory and practices of industrial education throughout the years.

**TECED-708 Issues in Technology Education 2 cr.**

Spring and Summer

A seminar dealing with selected current issues in industrial arts. Developments of abilities to develop a position and defend it, to be critical without being offensive, and to be professional in an emotional atmosphere.

**TECED-710 Curricular Innovations in Technology Education 2 cr.**

Summer

Study of current innovative programs and practices in the teaching of industrial arts.

**TECED-735 Problems in Industrial/Technology Education 2 cr.**

Fall, Spring and Summer

Identification, selection, and the completion of a problem in industrial education, culminating in a Plan B paper.

**TECED-739 Introduction to Research in Vocational/Technology Education 1 cr.**

Fall and Spring

Study of selection criteria for advanced technical problems in industry and technology, development of techniques appropriate to attacking these problems, identification of industries and organizations relating to these problems and preparation of a detailed proposal to explore a particular problem. Students should enroll for this course during their first graduate enrollment and plan to take the appropriate "problems" course during their next enrollment.

**TECED-746 Seminars in Technology Education 1-3 cr.**

Identifying goals and outcomes for the local school; development of immediate and long-range curriculum plans; cooperating with local school administrative units in planning for improvement; use of the new Wisconsin curriculum guide for industrial education; initial preparation of individual courses of study for the local school program using behaviorally stated objectives.

**TECED-770 Thesis -- Industrial/Technology Education 2-6 cr.**

Fall, Spring and Summer

Independent research under direction of investigation adviser. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of method of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for two, four or six semester hours of credit in various terms with a final total of six.

Prerequisite: EDUC-740.

**TECED-775 Workshop 1-3 cr.**

Fall, Spring and Summer

Special topics providing hands-on or experiential learning activities. Specific content and title to reflect the topic of the workshop. R

**TECED-798 Field Experience 1-2 cr.**

Fall, Spring and Summer

**TECED-895 Field Study in Industry and Technology 2-6 cr.**

A study which provides the graduate student with the opportunity to: 1) explore in-depth the body of knowledge associated with his substantive teaching field in industry and technology, 2) provide an educational experience for implementing this knowledge into the classroom situation, and 3) devise methods to determine if this methodology has brought about desired behavioral changes.

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## **TECH Technology**

**TECH-532 Futures of Technology 2 cr.**

Fall

Concepts of future studies as applied to technology. Exploration of possible alternatives. Techniques and skills for the professional user and the citizen consumer.

**TECH-540 Future of Work 1-2 cr.**

Future possibilities as to why people work, who will work, and in what conditions. Project probable work parameters from current trends. Relate past, present, and future to students' individual work situations.

**TECH-733 Impacts of Technology 2-3 cr.**

Fall and Summer

A contemporary, historical and futuristic look at some of the economic, sociological, psychological and political implications of industry and technology. Students will identify and investigate several impacts of industry/technology to show depth of understanding and relationships between them.

**TECH-775 Epistemology of Technology 3 cr.**

Summer

The nature, sources, and parameters of knowledge, in this instance technology, and its relationship to other organized bodies of knowledge. R

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## **TRANS Transportation/Energy**

**TRANS-595 Seminar (1-2 cr.)**

Specific content is designed to upgrade competencies of participants. Content will change to reflect current state of the art in transportation. R

**TRANS-735 Problems in Transportation/Energy (2-6 cr.)**

Substantive study and activity for specialists in the transportation/energy field to include library work, field observation, laboratory work planned by the student and approved and supervised by a faculty consultant in transportation/energy. Preparation of a technical report. May be repeated for a maximum of six semester credits.

**TRANS-792 Special Projects in Transportation/Energy (2-6 cr.)**

Substantive study and activity for specialists in the transportation/energy field to include library work, field observation, laboratory work planned by the student and approved and supervised by a faculty consultant in transportation/energy. Preparation of a technical report. May be repeated for a maximum of six semester credits.

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## **TRHRD Training and Human Resource Development**

**TRHRD-560 Training Systems in Business and Industry 3 cr.**

Fall, Spring, Summer and Winterm

Types and purpose of training as related to business and industry. Training analysis, content, delivery systems, evaluation and justification for training. Designed for non-education majors.

**TRHRD-570 Training Methods in Business and Industry 2 cr.**

Fall

Identification of training situations where the development and delivery of training is needed. Emphasis is on methods to deliver a training session. Students will be required to make training sessions presentations.

**TRHRD-575 Workshop 1-3 cr.**

Fall, Spring and Summer

Special topics providing hands-on or experiential learning activities. Specific content and title to reflect the topic of the workshop.**R**

**TRHRD-589 Training Internship 1-8 cr.**

Fall, Spring, Summer and Winterm

Opportunities for students to learn and practice training management and instructional techniques through activities and experiences in a training department. Objectives commensurate with student's background and field of training. Activities include designing and implementing training programs in student's major or minor field of study in either industry, business, military or government training programs.

Prerequisites: take TRHRD-560. **R**

**TRHRD-600 Workshop 1-3 cr.**

Fall, Spring or Summer

Special topics in training and human resource development providing hands-on or experiential learning activities. Specific content and title to reflect topic of the workshop.**R**

**TRHRD-730 Training Design and Evaluation 3 cr.**

Fall and Spring

The systems approach to the design and evaluation of training modules in a business training context, including performance problem analysis, writing training objectives, conducting a training analysis, selection, design and evaluation of training methods, media and materials.

Students design and evaluate a training module using principles taught in the course.

Prerequisites: take TRHRD-560 and CTE-534.

**TRHRD-735 Field Problem in Training and Development 4 cr.**



Fall, Spring, Summer and Winterm

Identification of a training and development research problem in business and industry. Review of related research, selection of appropriate methodology, completion of research procedures, analysis of results and formulation of conclusions, recommendations and implications for practice. Final product is a written research report.

Prerequisites: take INMGT-700.

**TRHRD-740 Management and Coordination of Training and Development 3 cr.**

Spring

Principles and processes necessary to effectively manage and coordinate the training function in business and industry. Topics include strategic planning, responsibilities and tasks of managing training projects, facilities planning, legal and ethical considerations in training, and trends in the training and development field.

**TRHRD-746 Seminar in Training and Development 1 cr.**

Fall

Special topics on current developments in training and development. Each seminar is devoted to a specific issue to be indicated with subtitle and description. **R**

**TRHRD-775 Workshop 1-3 cr.**

Fall, Spring and Summer

Special topics providing hands-on or experiential learning activities. Specific content and title to reflect the topic of the workshop. **R**

**TRHRD-789 Internship in Training and Development 2-8 cr.**

Fall, Spring and Summer

Opportunities for students to use competencies in analyzing training needs, design training, delivering training and evaluating training in an organization. Course objectives commensurate with student's knowledge, skills, experience and interests.

Prerequisites: take CTE-534, TRHRD-730 and MEDIA-710. **R**

